TAMPERE UNIVERSITY OF TECHNOLOGY

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DESIGNING KNOWLEDGE-INTENSIVE BUSINESS SERVICES – GUIDELINES FOR NEW SERVICE DEVELOPMENT AND THE MANAGEMENT OF INNOVATION

Master of Science Thesis

Prof. Antti Lönnqvist has been appointed as the examiner at the Council Meeting of the Faculty of Business and Technology Management on November 7th, 2012.

ABSTRACT

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Knowledge-intensive firms are a category that is on the forefront of innovation and economic growth. These firms are seen by the academic community to be much different from a managerial perspective than traditional product-based companies or even some service firms. However, there is still little understanding on how such firms are actually managed in a way that results in competitive advantage, especially in the context of innovation management. As a result, most authors have settled for acknowledging that services merely happen and cannot be managed.

The research goal was to add to the understanding of new service development in knowledge-intensive firms, building on previous literature and generating new insight through a two-phased empirical research part consisting of action research within a knowledge-intensive firm and a set of focused interviews with directors, managers and new service development practitioners in successful knowledge-intensive firms. The interviews consisted of 11 interviewees in 8 different firms, both technologically driven and professional service firms, and the action research was done in a technology driven software consulting firm during a new service development project that lasted for 6 months.

The results clearly showed that innovation management and the management of new service development is in its infancy in knowledge-intensive firms. It is not as well thought out as new product development tends to be, and is hindered because of its service-nature, treated as a special category of products. To remedy this, two findings were presented that could help to evolve innovation management in knowledge-intensive business services. First, innovation and new service development was said to be manageable, on the contrary to previous research, but it was argued that it should be managed with a discipline that does not hinder the innovative capabilities of individual knowledge workers. Second, innovation management should have a generalized structure for new service development but innovation itself was seen to be best managed with inherent, identity driven strategy that creates boundaries for self-actualized innovative activities.

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Tietointensiiviset palveluyritykset ovat yksi kansantaloudellisesti merkittävimmistä sektoreista, johtuen pitkälti niiden kyvystä innovoida ja luoda uutta liiketoimintaa. Nämä yritykset nähdään johtamisen kannalta erilaisina kuin perinteiset tuotantoyritykset, tai useimmat palvelusektorin yritykset. Tästä huolimatta tietointensiivisten yritysten johtamisen teoria ja erityisesti innovaatioiden johtamisen metodiikka on vasta alkutekijöissään. Useat tutkijat ovatkin päätyneet vain toteamaan, että palvelut vain tapahtuvat, eikä niitä edes voi johtaa.

Tämän tutkimuksen tavoite oli ymmärtää innovointia ja uusien palveluiden tuottamista paremmin tietointensiivisissä yrityksissä. Tutkimus rakentui kahden erilaisen empiriaosion päälle; toimintatutkimuksessa käsiteltiin yhtä tietointensiivistä yritystä yhden palveluiden tuottamisprojektin näkökulmasta kuuden kuukauden ajan, ja fokusoiduissa haastatteluissa haastateltiin johtajia ja asiantuntijoita kahdeksasta eri yrityksestä, yhteensä 11 haastateltavan otoksella. Otokseen kuului niin teknologisesti orientoituneita kuin enemmän johdon konsultointiin suuntautuvia yrityksiä, mutta pääpaino oli näitä kahta ääripäätä yhdistävissä yrityksissä ja organisaatioissa.

Tutkimuksen tulokset osoittivat selvästi, että innovaatioiden johtaminen on vasta alkutekijöissään tietointensiivisissä yrityksissä. Se usein kärsii tuotekehityksen paradigmoista ja käsitteistöstä, joka ei sovellu niin hyvin palvelu- ja asiantuntijuuskonteksteihin. Tutkimuksen keskeisimmät tulokset liittyivät kahteen pääkohtaan. Ensiksi, innovaatioita ja uusien palveluiden luomisprosessia voi johtaa, vaikka usein toisin väitetäänkin, mutta tämä johtaminen täytyy perustaa sellaiseen metodiikkaan, joka sallii tietotyöläisille luovuuden hyväksikäyttämisen, eikä tuo liikaa prosesseja tai normeja johtamispraktiikkaan. Toiseksi, uusien palveluiden tuottamisen johtamisen tulisi perustua yleistettyyn rakenteeseen, mutta innovaatiokyvykkyyksien johtaminen nähtiin kuitenkin strategiavetoisena prosessina, jossa yrityksen suunta ja identiteetti ohjaavat tietotyöläisten toimintaa epäsuorasti, kulttuurin kautta.

PREFACE

"The greatest danger in times of turbulence is not the turbulence: it is to act with yesterday's logic."
(Peter Drucker)

The fundamental paradigm behind this thesis was that it should not be possible in the 21st century that competitiveness lies in something that just "happens" and that is not managed. What does this actually mean? A knowledge-intensive firm stumbles upon an idea and a given time period later, they are providing it as a service. Nothing is managed, but something has happened as a result of flair, intuition, and luck. If companies rely on this for competitiveness, well, it might not get them very far. This research strives to understand the innovation processes and new service development in general, hopefully taking a step towards the right direction.

Many academics and especially those methodological purists will find this thesis arrogant and problematic, since it combines ideas from different academic fields and takes a practical view on the subject. However, it should be valuable for managers, directors and new service development practitioners looking for something that could help them steer their innovative workforce and innovation processes better. This thesis is directed to knowledge-intensive business services only, so it should not be looked through the eyes of a product development professional or it should at least be analyzed with caution when used outside of its scope (even if it may provide useful).

It was a pleasure to work on this thesis. As I did do this for a living as well, gaining an objective view through numerous interviews and different companies was fruitful and extremely interesting. I would like to thank the participants, and especially Data Rangers OY and professor Lönnqvist, who made this possible. I sincerely hope that this thesis will result in some academic debate and therefore advances in the management of knowledge-intensive firms. If not, at least I understand managing new service development in knowledge-intensive firms much better and will continue to put this insight into practice.

In Helsinki, Finland Jarno Kartela

1.12.2012

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Motivation for research

"Deregulation and the advent of competition have changed the rules of the game for service companies" (Gordon et al. 1993, p. 135).

First and foremost, these new rules of the game require companies to develop and launch new services in order to succeed in the marketplace (Johnson et al. 2000, p. 1; Edgett 1994, p. 40). This has proven to be a daunting task. Whereas new product development is analyzed comprehensively in both academic and business environments, the scarcity of literature and research on new service development remains an issue for both practice and theory (Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175). Therefore, the science and practice of developing and launching new innovative services is still considered as a 'black art' (Kelly & Storey 2000, p. 45). Given the importance of new service development as a competitiveness driver, it is safe to say that our current understanding development processes and managerial activities resulting in success are significantly inadequate (Menor et al. 2002, p. 136; Magnusson et al. 2003, p. 111). This does not mean that successful service innovations are not constantly developed, but to point out that these innovations are not managed or controlled as well as the product sector seems to do.

"Innovation research to date, though insightful, has treated services as a special category of products – that is, what goods are not – thereby employing residual conceptualizations of service innovation" (Ordanini & Parasuraman 2012, p. 3).

Service innovation and new service development has long been neglected by practitioners and academics (Bullinger et al. 2003, p. 276). Furthermore, even the existing literature on service innovation emphasizes certain domains for innovation, usually related to the tradition in which the contribution fits (den Hertog et al. 2010, p. 491). This hinders the development of insightful service innovation research, which is mirrored in the fact that compared to physical products services are generally under-designed and inefficiently developed (Menor et al. 2002, p. 136). Therefore new service development and service innovation should be treated with the same vigor as new product development – helping companies to survive in the fierce competitive environment and to succeed in the knowledge economy.

This knowledge economy has, not surprisingly, knowledge as its key resource, promoting a variety of knowledge-related theories (see e.g the knowledge-based view

(Kogut & Zander 1992), the knowing organization (Choo 1998), the knowledge company (Stewart 1997; Sveiby 1997), the knowledge-based business (Davis & Botkin 1994), the knowledge-based organization (Leonard-Barton 1995), the knowledge-creating company (Nonaka & Takeuchi 1995), and the learning organization (Senge 1994) as some key examples). In the organization sciences literature, this development is reflected in the concept of the knowledge-intensive firm, a broad concept that withholds different organizations in both consumer and business markets (Rylander & Peppard 2009, p. 2). These firms are central in the so-called knowledge markets of today's economy, as they have knowledge as the main input and output (Gallouj 2002, p. 256). From this basis, it is also argued that some of these knowledge-intensive firms have taken a proactive, leading role in our economy (Howells 2000, p. 5). Thus it is surprising that research in new service development and innovation in knowledge-intensive firms is still mainly absent (Valls-Pasola & Amores-Bravo 2012, p. 80).

Given the leading role of knowledge-intensive firms in our economy, adding the long neglected, but highly important aspect of new service development and focusing on the business markets, this research will give insight on a matter that is important to both academics and practitioners involved in the knowledge-based economy.

1.2. Research background

Whenever studying e.g. innovation, new service development or new product development, one encounters a problem of cross-functionality, having to connect the ideologies of different academic fields which are closely related but heading towards different directions, requiring methodological pluralism and non-conventional ways of approaching the topic at hand (Karniouchina et al. 2006, p. 274; Brax 2007, p. 16). Therefore, it is not sufficient to study new service development from a single academic perspective (marketing, for instance), but to gather the ideologies of different fields. This may be contradictory to the utmost form of academic vigor, but essential from a practical point of view.

From a practical view, this research has its roots in a managerial problem faced by Data Rangers Oy, a small privately owned company that specializes in monitoring and analyzing information. The company is situated in Helsinki, Finland and employs just over 10 people, serving both international and domestic clients and co-operating with other Finnish high technology and knowledge-intensive organizations. Since its beginning in 2004, Data Rangers Oy has built solutions for data analysis, corporate foresight and other solutions directed mainly to the analytical and data-oriented functions of their clients.

Now the company is striving to build its consulting services to fulfill the needs of their growing customer base. However, the commercialization, design and development of these knowledge-intensive business services have been a daunting task. In short, the

organization strives to understand how new services are developed and designed in the field of knowledge-intensive business services. This presents the first goal for this research:

RG1: *Understanding new service development through the eyes of a knowledge-intensive business organization.*

As noted before, there is a lack of research in the field of new service development and innovation (Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175). The research in the field is divided into different areas of interest, such as innovation management (e.g. den Hertog et al. 2010; Dörner et al. 2011; Oke 2007; Miles 2008), customer involvement (e.g. Lundkvist & Yaklef 2004; Martin et al. 1999; Magnusson et al. 2003; Matthing et al. 2004), strategic management (e.g. Alam 2003; Grawe 2009; Kelly & Storey 2000), models of new service development (e.g. Scheuing & Johnson 1989; de Jong et al. 2003; Stevens & Dimitriadis 2004; Johnson et al. 2000), antecedents of successful service innovations (e.g. Njissen et al. 2006; Menor et al. 2002; Martin Jr & Horne 1992; de Jong & Vermeulen 2003; Edgett 1994), among others.

All of these subfields do have two main issues in common. First the procedural development perspective, pointed out by Johne & Storey (1998, p. 201) over a decade ago: *"it is surprising that there has not been more effort to develop a specific service development model"*. Obviously this has changed over the years, but the research still lacks such a paradigm. Second, the traits of successful new service development have evolved through time, but no set of critical success factors have been accepted as an archetype in academic research (e.g. Njissen et al. 2006; Menor et al. 2002; Martin Jr & Horne 1992; de Jong et al. 2003; Edgett 1994). The possible reason for this lack of paradigms and archetypes is that new service development is such a complex and heterogenic concept, that there is simply no single set of rules and procedures that would work as a standard in service development research and practice.

This research attempts to find the managerial issues and possible key activities that result in successful new service development, but in a more specific field of interest. Whereas most research in new service development study the concept in general (e.g. Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175), this research views it through a knowledge-intensive business service perspective. This would help to create a better understanding on how knowledge-intensive business services should develop their new services and what are the antecedents of success in the matter, helping such organization to survive and succeed in the competitive environment. This proposes a second goal for this research:

RG2: *Identifying the managerial issues and key development activities of successful new service development in the field of knowledge-intensive business services.*

The goals presented here can be translated into research questions, further analyzed in the next chapter.

1.2.1. Research questions

The aforementioned two goals compose the pragmatic for this research answering how new service concepts are designed and developed in the field of knowledge-intensive business services. As such, these goals assist both academic and business worlds that are struggling with new service development as the prevalence of a goods-based view on organizational management hinders the development and research of a more service-oriented perspective to management and innovation (Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175). In order to achieve these goals, a set of research questions is formalized from the goals presented in the previous chapter. The main research question (*RQ*) responds to both research goals, yielding an understanding on new service development and its managerial issues through the eyes of knowledge-intensive business services. The main research question is then presented as follows:

RQ: *How are new services designed and developed in the field of knowledge-intensive business services?*

Answering the main research question requires insight on theory and practice related to the following topics; services and the service economy, knowledge-intensive business services, new service development and innovation management, critical success factors and traits of new service development, as well as some subfields of new service development, such as commercialization and service delivery systems. These topics and the main research question can be illustrated through a framework presented in figure 1.

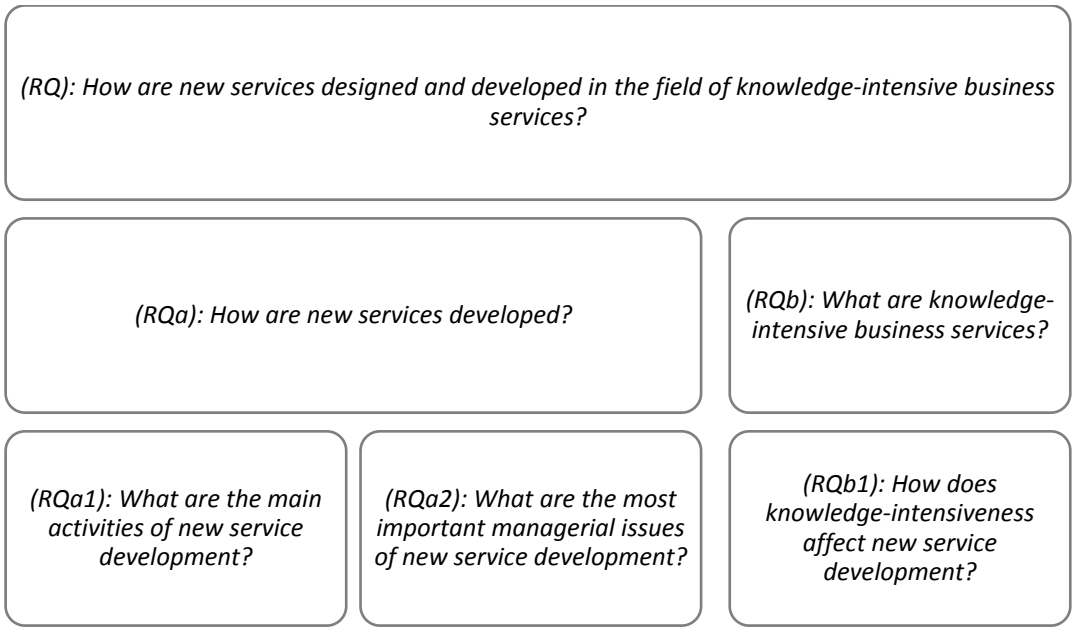

Figure 1: Research questions.

These questions are analyzed and answered through an extensive literature review and a set of empirical research methods, which are further discussed in chapter 1.3. Here it should be pointed out that all of the research questions as such are affected by the concept of knowledge-intensity, which is analyzed in chapter 2.

1.2.2. Scope

As suggested earlier, innovation and new service development studies are broad concepts that are difficult to study as they are derived from different academic fields with different intents and purposes as well as different paradigms and lexicon (Karniouchina et al. 2006, p. 274). This is why the research scope cannot be narrowed down by cutting out fields like marketing, organizational management or service engineering. All of these are essential and used in this research. However, concepts like marketing or strategic management are only seen as *supporting* academic fields, not as key areas of research.

The focal point of this research and the main field of interest is *new service development and innovation* which it is further limited to *knowledge-intensive business services*, giving the research a more specific scope. Moreover, as knowledge-intensive business services are a broad concept, it is further narrowed down by von Nordenflycht's (2010) categorization (see the full analysis on knowledge-intensive business services in chapter 2.3), including so-called *neo-professional service firms* and *technology developers* which have business services as their core offering. This leaves out classic professional service firms, such as law firms, accounting firms and architecture, as well as professional campuses, such as hospitals or universities, helping to provide much more insightful and practical set of findings and implications for the selected organizations.

1.3. Research philosophy, strategy and methods

Whenever talking about business research, one must realize the fact that there are a lot of choices to be made regarding research strategy, research philosophy and research techniques and methods. These choices are related to concepts that are quite usually interlinked, subjective and terminologically difficult, so it is essential to build a comprehensive view that underlies these concepts (Saunders et al. 2009, pp. 107-108). Figure 2 illustrates this view, presenting the key concepts and their relations.

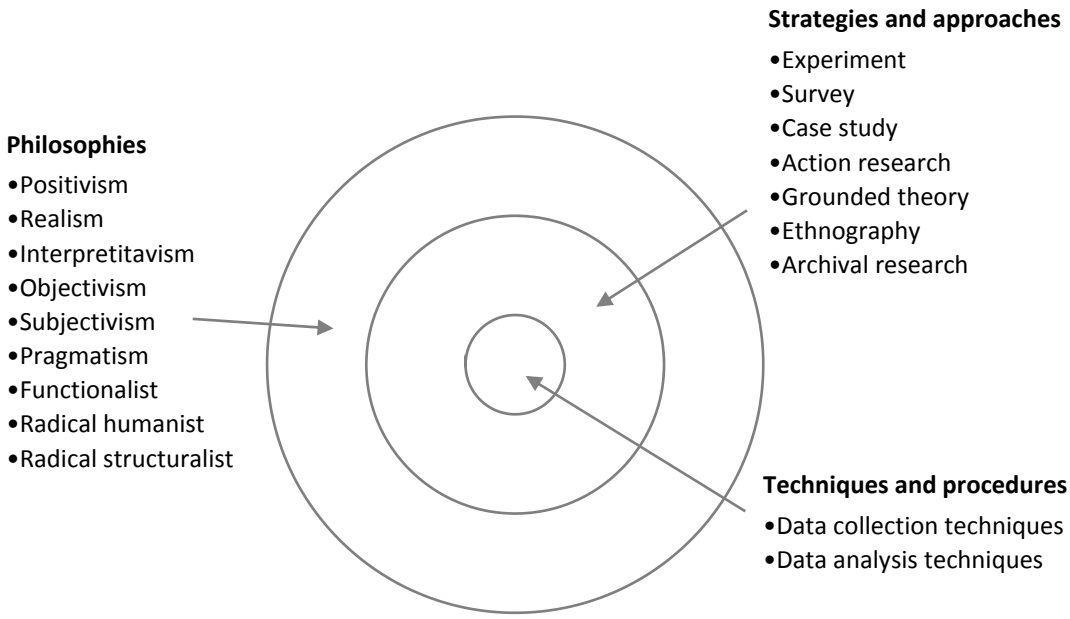

Figure 2: Key concepts and their relations (adapted from Saunders et al. 2009, p. 108).

Saunders et al. (2009, p. 108) leave out an important concept that is hermeneutics. Von Wright (1970, pp. 2-3) argues that all of the strategic, methodological and technical choices are derived from a main philosophical question, that is whether to choose a positivistic or a hermeneutic view. A positivistic view strives to find an objective truth to the given problem, whereas a hermeneutic view aims to understand and explore the matter, interpreting and socially constructing a subjective solution (Olkkonen 1994, p. 38). Furthermore, hermeneutics is mainly based on idealism, whereas positivism is grounded on realism and thus highly related to objectivism (Olkkonen 1994, pp. 26–27). Given the research background, the research questions and their business nature, a hermeneutic view seems more appropriate, but the concept deserves more attention at this point.

First, it is understood that all problems related to an enterprise have roots in social elements, so a purely positivistic approach is usually too narrow-minded (Reason & Bradbury 2001, p. 88). Second, a hermeneutic view develops dialogue through

understanding, interviewing and observing the problem and its context, hence creating a holistic understanding of the situation at hand, which is crucial to solving the problem described in chapter 1.2 (Marschan-Piekkari & Welch 2004, p. 325). Third, hermeneutics is namely used in this research as an underlying philosophy rather than a specific mode of analysis, because it provides the grounds for interpretativism, an underlying epistemology for qualitative research (Myers 1997, p. 10). Now the question arises; if the underlying philosophy is based on a hermeneutic view, what is the role of interpretativism and qualitative research in the strategic context of this research?

It is argued that interpretativism is strategically highly appropriate in business research (Saunders et al. 2009, p. 116). Interpretativism is an alternative to the positivist view of analysis, building on the notion of hermeneutics (Bryman & Bell 2007, p. 19). Interpretativism suggests that facts have to be reconstructed in the light of interpretation, arguing that data is not detachable from theory (Baskerville & Myers 2009, p. 40). Furthermore, interpretativism is always present as endless choices and decisions are made during the research process, which is especially true in business studies (Gummesson 2003, p. 483). As proposed earlier, the nature of business studies is rooted in a social context and since interpretativism urges the researcher to understand this social aspect of a defined problem and to enter the unique, complex situations that are present in organizations, it is a good strategic choice for business research (Saunders et al. 2009, p. 116). These complex and unique situations are derived from the ideology that people and their institutions are fundamentally different from the world of natural sciences, proposing that interpretativism, with a hermeneutic philosophical background, is indeed highly appropriate for this research as well (Bryman & Bell 2007, p. 17). Following Saunders et al. (2009, p. 108) and continuing from the philosophical and epistemological issues to a more strategic context, the next chapter will assess the issue of research approach and research strategy.

1.3.1. Formalizing a research approach

As suggested earlier, a hermeneutic-interpretativistic philosophy is appropriate for business research in general and for this research as well (Bryman & Bell 2007, p. 28). Moving towards strategy and tactics, the philosophical viewpoint chosen promotes qualitative research over quantitative research (Myers 1997, p. 10). However, qualitative research is criticized for being too subjective, difficult to imitate and hardly transparent or easy to generalize (Bryman & Bell 2007, pp. 423-424). Despite this, qualitative research is important and may be even more appropriate for business research than its normative counterpart because of a number of advantages it has to offer. First, qualitative research relies on interpretativism, which is the key epistemological view in business research (Bryman & Bell 2007, p. 28). Second, qualitative research can be a mix of deductive and inductive approaches, from which especially the latter is considered important in social sciences (Saunders et al. 2009, p. 489). This is because a deductive approach starts with a theoretical framework that is

applied to the problem space, whereas an inductive approach analyzes the data from a given situation and yields theoretical implications through analysis. Induction is therefore applicable in natural sciences (e.g. physics) and deduction is more appropriate in social sciences (e.g. strategic management theories).

Derived from the interpretativistic and hermeneutic philosophical background and mixed-method ideology, the next step is to choose an approach. Saunders et al. (2009, p. 108) give various options for a research approach, of which a chosen few are appropriate for business research. Especially in Finnish business economics research, there are five main choices; namely concept-analytical, nomothetic, action-analytical, decision-oriented and constructive (Kasanen et al. 1991, p. 302; Olkkonen 1994, p. 78). These five choices are grounded on two main paradigms: theoretical-empirical and descriptive-prescriptive (or normative). Given the research goals and questions, it seems clear that the research is highly empirical, because it involves interaction, participation and involvement in the organization, its social settings and business operations (Gummesson 2003, p. 491). However, there is also a need for a theoretical framework that works as a baseline for developing an understanding in new service development and innovation. Hence this research uses a theoretical part that underlies the empirical section, which is a basic structure for empirical research (Peffers et al. 2006, p. 92). For the purposes of selecting an approach, it is sufficient to acknowledge that even though this research includes a theoretical part, it is empirical of nature as it builds a solution for a practical problem.

Acknowledging the empirical nature of this research is quite straightforward, whereas the paradigm between descriptive and prescriptive is more difficult. Descriptive analysis focuses on asking why and how a problem, an issue, a situation or anything else has occurred or has been constructed, whereas prescriptive analysis concerns the question of what can be done better or what can be more useful in such a problematic context (Bell et al. 1988, pp. 16-17). Looking back at the research goals and questions, it seems clear that the given practical problem and its empirical settings require a practical solution, thus a prescriptive approach (Tsang 1997, p. 74). However, a descriptive approach is also required when making sense of the problem space and when building a theoretical background for the research.

The simultaneous use of descriptive and prescriptive approaches is essential for influential business research, because prescriptions offer advice that is crucial for organizations and descriptions are required to understand the underlying business principles (Bazerman 2005, p. 26). And since the goal for this research is to build a solution for a problem within a business context, it is essential to emphasize the prescriptive, pragmatic and empirical nature of this solution. Figure 3 represents the relative position of this research in the framework from Kasanen et al. (1991, p. 302) and Olkkonen (1994, p. 78).

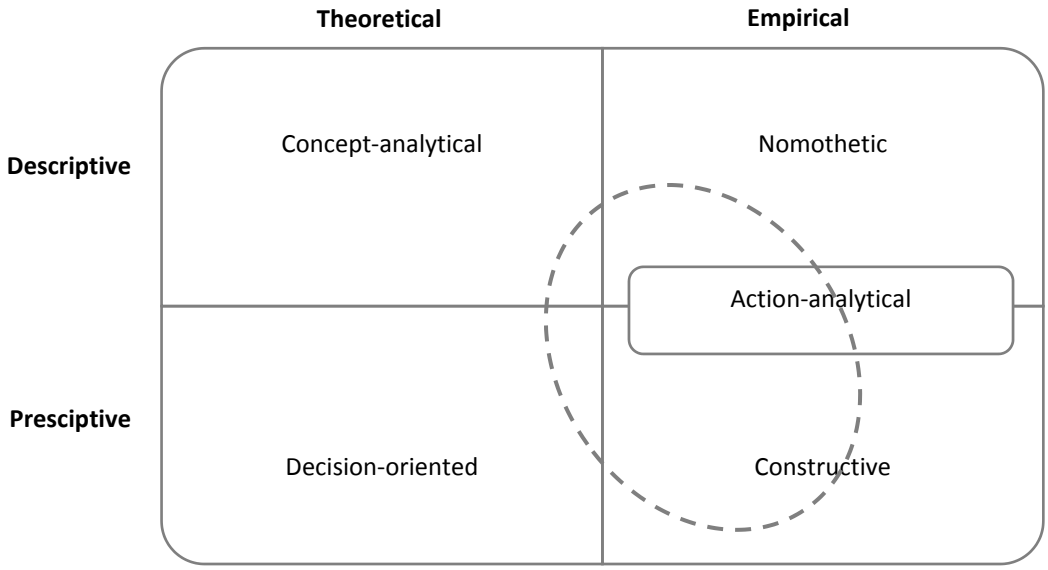

Figure 3: The relative position of this research within the research approach –framework (adapted from Kasanen et al. 1991, p. 302; Olkkonen 1994, p. 78).

As figure 3 suggests, this research is both constructive and action-analytical. These two approaches are somewhat similar to design science, forming a trifold choice of research approach (Jönsson & Lukka 2006, p. 377). Action research aims to solve a practical business problem and it involves working with the people, processes and context where the business problem exists (Myers 2009, p. 62). This is appropriate for the given research goals and questions, but the choice between action-analytical research, design science and constructivism is not that simple.

For instance, design science solves construction problems and especially improvement problems, such as the one presented as a goal for this research (Järvinen 2007, p. 44). Similarly, action research modifies a given reality or develops a new system (Järvinen 2007, p. 40). In this view, both design science and action-analytical approaches are suitable. Given the research goals, a constructivist approach is also appropriate, as it is stated as a good approach for management problems, which are of social nature and require practical solutions (Mir & Watson 2000, p. 950). It would appear that a decision between the three approaches is impossible to make in a purely objective way, so the decision is clearly based on the researcher's mental models and the philosophical issues discussed earlier.

Looking back at the decision between descriptive and prescriptive, both were clearly required for the purposes of this research, so choosing either a purely nomothetic or constructive approach would not be appropriate given their philosophical background (Kasanen et al. 1991, p. 302; Olkkonen 1994, p. 78). The decision leans even more towards an action-analytical approach, as Gummesson (2000, p. 208) argues that action

research is practically relevant in the specific case that is given and that the research is tested and modified trough action. Thus action research ensures that the theoretical basis is in fact practically relevant, which is the primary goal for this research, as proposed earlier (Myers 2009, p. 62; Järvinen 2007, p. 39; Payne & Payne 2004, p. 9). There could be some debate whether design science or constructive research would also work as suitable approaches, but considering the given managerial problem, goals, research questions and philosophical matters discussed, an action-analytical approach is clearly most suitable for all intents and purposes of this research. Continuing from a strategic view towards tactics, the next step is to choose the research methods and techniques.

1.3.2. Research methods and techniques

As proposed earlier, the philosophical viewpoint chosen promotes qualitative research over quantitative research (Myers 1997, p. 10). However, a mixed-method approach is usually better than a mono-method approach, especially in business research (Saunders 2009, p. 152; Marschan-Piekkari & Welch 2004, pp. 163-164). Ghauri & Grønhaug (2005, p. 113) propose a division between qualitative and quantitative techniques from the view of research methods. Figure 4 illustrates this division of techniques and methods.

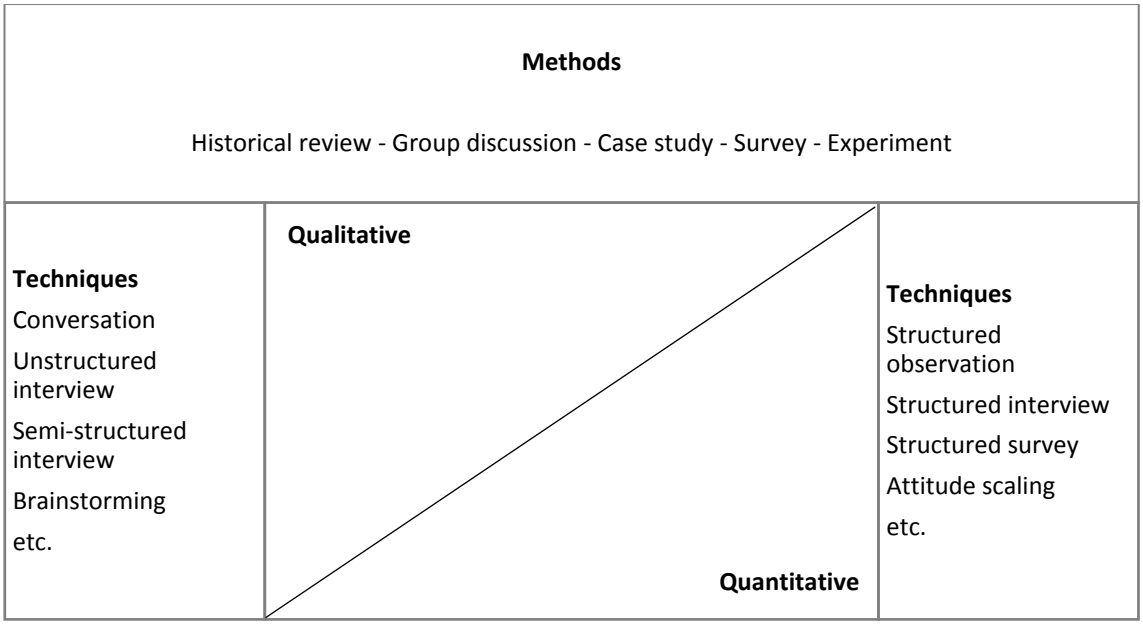

Figure 4: Qualitative and quantitative techniques relative to research methods (adapted from Ghauri & Grønhaug 2005, p. 113).

Since this research is qualitative and analyzes a company in a case-like manner, it could be argued that a case study is appropriate (see e.g. Ghauri & Grønhaug 2005, p. 113). It is somewhat similar to action research, which is based on taking action and interacting with the organization and the given problem context, its social structures and individuals (Gummesson 2000, p. 119). However, the researcher on a case study has

little control over the events in real-life (Ghauri & Grønhaug 2005, p. 115), which is not true since the researcher has significant control over the events occurring in the case company.

Since case studies focus on in-depth contextual analysis of a few events or conditions (Cooper & Schindler 2003, p. 152), it can, however, be suggested that the action research phase is inherently a case as well. The difference is that even though action research may be a case study as well, a case study is not inherently action research. Even though case study methodologies and principles are used, management action science underlies the whole research much more accurately. This is because management action scientists contribute to the practical problem and to science in general, interacting with the key stakeholders of the research (Gummesson 2000, pp. 119-120). Looking back again to the research goals and questions, management action science is the obvious choice for this research.

Given the choice for an underlying research philosophy, a research approach and a research method, the last step is to identify the techniques used. Using Ghauri & Grønhaug's (2005, p. 113) framework as a basis, the techniques can be divided into qualitative and quantitative types. First, it was acknowledged that interpretativism is key to this research, suggesting that qualitative techniques should be preferred (Bryman & Bell 2007, p. 28). Second, management action research is essential as it requires taking action and participating in dialogue, conversations, problem solving and everything else that forms the social system that is an organization (Gummesson 2000, pp. 123-124). Looking back at the research questions and goals, action research responds to one part of the problem that is *understanding new service development through the eyes of a knowledge-intensive business organization* (recall RG1). For triangulation and for added insight, the second goal, *finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business services* (recall RG2), is researched in a different manner.

1.3.3. Qualitative techniques

As proposed in the previous chapter, action research is used as an empirical method to give insight on the first goal of this research. Action research is an obvious choice since it studies the problem in its social settings – taking action and participating on the day-to-day activities of the organization (Myers 2009, p. 62; Gummesson 2000, p. 208). This is exactly the case at Data Rangers Oy, where the organization is striving to develop new services with the help of the researcher. The second goal is much different, as it looks back into successful new service development projects and successful companies, gaining an understanding on the managerial issues and key development activities that have enabled such accomplishments and success. Thus the second goal requires a different technique.

Providing answers to the second goal is not straightforward as finding the main managerial issues and key development activities of successful new service development and innovation can be rooted in aspects of organizational culture, service systems, managerial decisions and other aspects that are usually in a form of knowledge that is difficult to formalize and communicate (Parent et al. 2000, p. 48; Fernandez et al. 2000, p. 87). This is why this research uses interviews as the main qualitative technique providing insight and in-depth knowledge of the research findings (Hair et al. 2011, pp. 194-195; Saunders et al. 2009, p. 321). These interviews use the basic principles of qualitative interviewing, such as encouraging the participants to follow directions that seem valuable in regards to the focal issue and promoting open conversation around key themes (Brymal & Bell 2007, p. 431).

Interviews can be structured, semi-structured or unstructured. Structured interviews fall into a mainly descriptive research category; semi-structured interviews are explanatory and exploratory whereas unstructured interviews are exploratory. (Saunders et al. 2009, p. 323.) Given this division between interview types, the second goal for this research is mainly exploratory – studying the managerial issues and key development activities of successful new service development and innovation. However, the decision of interview type requires more attention at this point. Patton (2002, p. 342) argues that unstructured interviews are most flexible when the goal is to pursue information and knowledge from a direction that is not predetermined. This is not exactly the case, as the direction is known but there is no structured way how to reach it. As such there is no fixed list of questions, but a clear idea of the concept that requires in-depth analysis (Hair et al. 2011, pp. 194-195; Saunders et al. 2009, p. 321).

This leaves out semi-structured interviews, proposing that there is a clear idea on the concept and themes that require attention, but in a way that is not completely structured or completely unstructured. As such, this type of semi-structured interviews follows the ideology of a *focused interview*, which proposes that the interviewees have knowledge on a given situation or problem and that the interviewer has researched the topic beforehand and built an interview structure that steers the interview into the themes that require attention (Merton et al. 1956, pp. 3-4).

This is similar to a *thematic interview* that is kind of discussion that focuses on common themes and does not have a predetermined list of questions (Hirsjärvi & Hurme 1988, pp. 35-36). The similarity of the two interview techniques is not a coincidence, as Hirsijärvi & Hurme (2004, p. 47) have derived their technique from the focused interview from Merton et al. (1956). For all intents and purposes of this research both of these similar interview types are applicable, because they evolve around key themes and use open-ended questions to gain insight on the topics at hand without a predetermined list of questions. However, as academic research usually strives to find the originating source of a theory or paradigm, this research follows this ideology and uses *focused interviews* as the main qualitative technique.

Table 1 summarizes the methods and techniques used in this research and their links to research goals (see chapter 4 for a more comprehensive view on the organizations and the conduction of the research).

Table 1: Research methods, target groups and relation to research goals.

METHOD	RESEARCH GOAL	TARGET GROUP OR ORGANIZATION
Action research	RG1: Understanding new service development in general and through the eyes of a knowledge-intensive business organization	Data Rangers Oy, a knowledge-intensive business service organization where the researcher works as a business development consultant
Focused interviews	RG2: Finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business services	Key personnel in knowledge-intensive business service organizations. 8 organizations, 11 interviewees.

1.3.4. Research structure

As proposed earlier, this research is conducted with a interpretativistic philosophical ideology, that builds upon hermeneutics and regards positivism as too narrow as an underlying philosophy (see e.g. Saunders et al. 2009, p. 116; Bryman & Bell 2007, p. 19; Reason & Bradbury 2001, p. 88). It is more prescriptive than descriptive, because the research goals are practical and require a practical solution (Tsang 1997, p. 74; Bell et al. 1988, pp. 16-17). However, the research does include a descriptive theoretical background that is essential for conducting the empirical part (Bazerman 2005, p. 26; Gummesson 2003, p. 491). The research uses a mix of action research and focused interviews, because they support each other in this context and in business research in general (Saunders 2009, p. 152; Marschan-Piekkari & Welch 2004, pp. 163-164). All of these principles have promoted an action-analytical approach, which underlies the management action research method used (Myers 2009, p. 62; Järvinen 2007, p. 39; Payne & Payne 2004, p. 9; Gummesson 2000, pp. 119-123).

The research is structured into six main chapters; introduction (chapter 1), knowledge-intensive business services (chapter 2), new service development (chapter 3), research methods (chapter 4), results (chapters 5 and 6, divided into two parts as in table 1), discussion (chapter 7) and conclusions (chapter 8). Chapters two and three form the theoretical background for this research, analyzing knowledge-intensive business services and new service development, yielding an understanding on current knowledge on the research topic. The empirical part that follows is divided into three chapters, from which chapter four presents the research methods used for conducting this research, and chapters five and six which provides the results from the conducted research. Chapter seven analyzes the empirical findings in the light of previous literature and chapter eight concludes this research with a summarization of the key findings.

2. KNOWLEDGE-INTENSIVE BUSINESS SERVICES

2.1. Introduction to service business

Adam Smith (1776) pointed out that service activities do not add anything to national wealth, whereas manufacturing most certainly did. There is no question that this is incorrect in our current economy. Furthermore, Porter (1985) suggested that economies of scale, cost leadership and differentiation are essential for organizational performance. For the most part this is still accurate, but the ideology of both leading authorities in business and economics is somewhat outdated. Over the last half century there has been a drastic change in most economies in the world, moving from goods-based manufacturing to providing services (Akehurst 2008, p. 1).

Goods and manufacturing as such still matter, but the difference is that when companies used to compete with mass production and industrialization, now the ability to manage knowledge assets and intellectual capital has been recognized as key to organizational success (Scarso & Bolisani 2010, p. 161). Furthermore, services provide higher margins, stable revenues and are harder to imitate than products, thus becoming a prominent source of sustainable competitive advantage (Oliva & Kallenberg 2003, p. 160). It has even been argued, that services have come to dominate economic exchange and theory (Lessard & Yu 2012, p. 510). But what is the difference between services and products, or is the division of these two even needed? A relatively naïve argument is to say services are something mainly intangible.

"It is wrong to imply that services are just like products except for intangibility. By such logic, apples are just like oranges, except for their appleness" (Shostack 1977, p. 73).

It is still common to acknowledge that services are something that is *not* products and this division is usually explained through the key characteristics of services. These characteristics are derived from the *IHIP*-acronym, which corresponds to the idea that services are *intangible*, *heterogenic*, *inseparable* and *perishable* (see e.g. Andreassen & Lanseng 2010, p. 213; Tronvoll et al. 2011, p. 562). First, intangibility means that a service is not palpable or material but is a deed, a performance or an effort. Second, heterogeneity means that each service is somewhat unique, as opposed to a standardized, mass-produced product. Third, inseparability suggests that a service is

produced and consumed at the same time. Last, perishability means that a service cannot be stored. (see e.g. Moller 2010; Fitzsimmons & Fitzsimmons 2008, p. 20.)

The IHIP-characteristics can be summed up to the fact that services are the opposite of products. Shostack (1977, pp. 73-73) argues that characteristics of services define it as *an antonym to products*, as they are the opposite of what products are. However, defining services as something that is not products is somewhat insufficient. Lovelock (1992, p. 13) does not use the antonym-definition, but specifies services as deeds, processes and performances. This is continued by Vargo & Lusch (2004b, p. 326) who have a more specific definition of a service as the application of specialized competences, through deeds, processes, and performances for the benefit of another entity or the entity itself. This application-benefit –concept deserves more attention.

Even though services can be seen as something that is not products, they can also be looked at as the facilitator of economic exchange and value creation through the application-benefit –concept, because economic exchange is fundamentally about service provision (Vargo & Lusch 2004b, p. 326). Considering that goods and products deliver value only through use (i.e. application), they deliver value (i.e. benefit) through the service they provide (Vargo & Lusch 2008, p. 7). Thus, regardless of whether customers buy goods or services, they consume them as a service (Grönroos & Ravald 2011, p. 7). However, the value-perspective is not the only difference. Table 2 points out some of the main differences between a goods-based and a service-based view, yielding a better understanding on what are the differences between goods and services.

Table 2: Distinguishing characteristics of goods and services (Vargo & Lusch 2004a, p. 7).

	GOODS	**SERVICES**
Primary unit of exchange	Goods and products – produced resources	Specialized competences or services – producing resources
Role of goods	Goods are produced resources are end-products	Goods are transmitters of producing resources (i.e. knowledge) and intermediaries
Role of customer	Customer receives goods as a produced resource	Customer co-produces the services as a producing resource
Definition and meaning of value	Producer determines the value and is embedded in the produced resource yielding an exchange value	Customer determines the value on the basis of value-in-use, resulting from the application of producing resources which can be transmitted through produced resources
Supplier-customer -relationship	Customer is a operand resource	Customer is a producing resource
Source of economic growth	Surplus from tangible resources and goods	Application and exchange of specialized knowledge and skills

2.2. Perspectives in the science of services

The majority of service research is conducted within the field of services marketing and the other fields have mainly adjusted the core assumptions of this marketing paradigm (Brax 2007, pp. 14-15). Hence the marketing perspective should be considered as important in this research as well.

As the research on how to support the management and design of services has become more important, it has also prompted a new field of research called service science (Lessard & Yu 2012, p. 510). Service science is a research area that works as a basis for systematic service innovation and aims to combine organizational and human understanding with business and technology-related expertise to explain the origins and growth of service systems (Maglio & Spohrer 2008, p. 18). Whereas service science strives to comprehend and explain the science and dynamics of service systems, it does lack a perspective, vocabulary and assumptions that are required to build such a basis for systematic service innovation. As in any field, there are several different ideologies and principles that have participated in the creation such a basis, but one of the most known is the *service-dominant logic* (Maglio & Spohrer 2008, p. 19).

Service-dominant logic sees value creation as a sum of combined efforts from suppliers, employees, customers and other stakeholders and actors, but the value itself is always determined by its beneficiary – thus usually the customer (Vargo et al. 2008, p. 148). Service-dominant logic focuses on this *co-creation of value*, and can be seen as a *perspective* to science of services (Tronvoll et al. 2011, p. 561; Grönroos & Ravald 2011, p. 9). As such, service-dominant logic means moving away from the goods-based view on organizational management, but its roots are in marketing theory going back to the 1970's when Shostack (1977) argued that organizations should break free from product marketing (see e.g. Vargo & Lusch 2004a for a brief historical review). Figure 5 illustrates this evolvement of service-dominant logic.

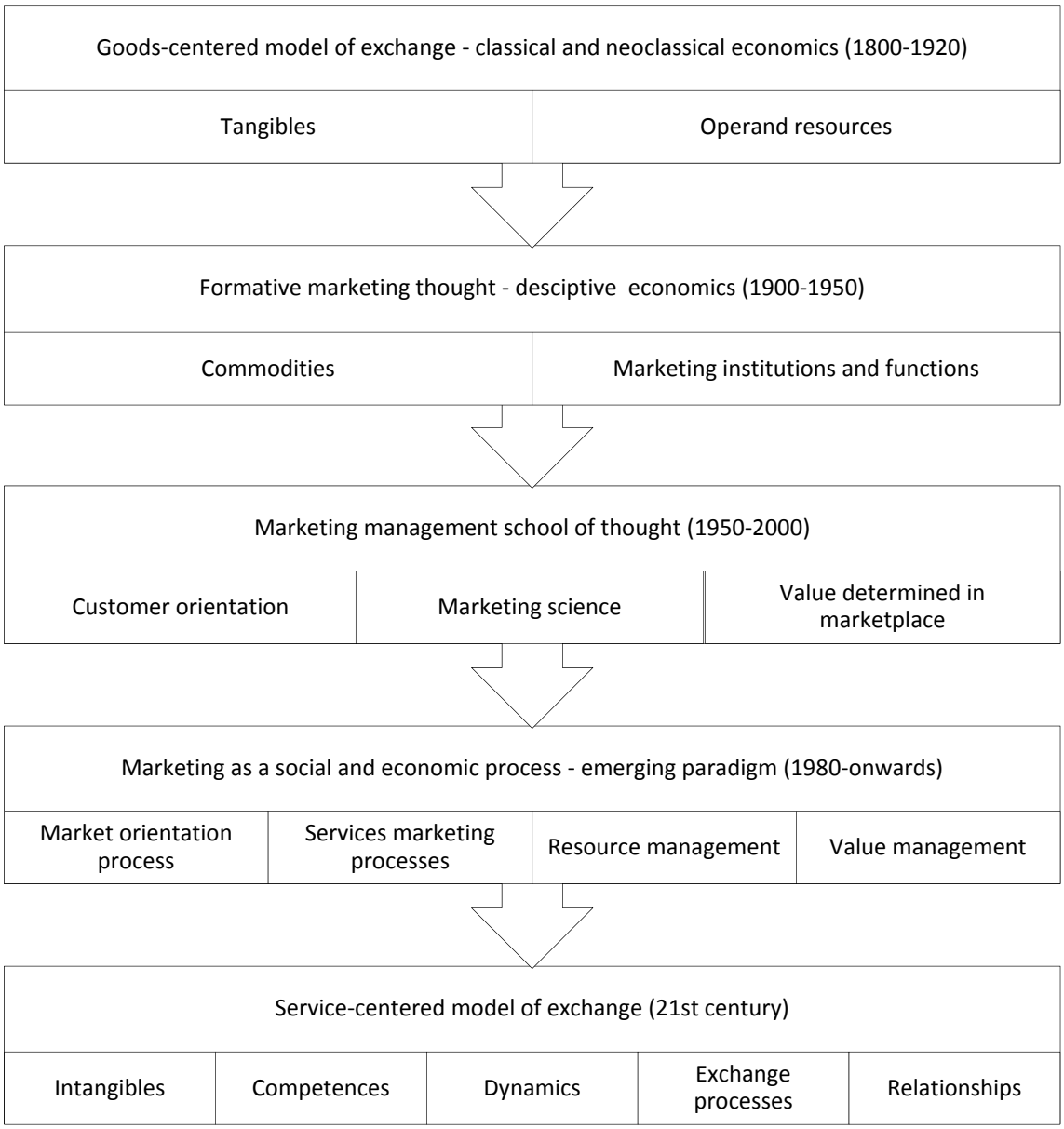

Figure 5: Marketing logic from the 1800s to the 21st century (adapted from Vargo & Lusch 2004a, p. 4)

As illustrated in figure 5, marketing has evolved through time to understand concepts of intangibility, marketplace-determined value, marketing processes, competences and relationships. As such, service-dominant logic is not an end-state, but a ways of reaching a specific goal that is providing a transcending organizing framework for understanding economic phenomena (Maglio & Spohrer 2008, p. 19; Lusch & Vargo 2011, p. 1303). First of all, this organizing framework is logic for separating goods-dominant and service-dominant views (Vargo & Lusch 2004a, p. 7). Second, it is a set of foundational premises (analyzed in chapter 2.3) that help to understand the nature of services. Third, the service-dominant logic brings out a lexicon that supports the nature of services better than the goods-based lexicon that is intrinsic to past economic and organizational theory as well as business practice (Maglio & Spohrer 2008, p. 19; Lusch & Vargo 2006, p. 282).

Here it should be noted that even though the service-dominant logic has become one of the most known theories regarding a service-centered view on marketing (and economic exchange in general), it is not something to displace others (O'Shaugnessy & O'Shaugnessy 2009, p. 784). However, it is important in the light of this research and does steer the vocabulary and general mindsets of managers towards the right direction.

2.3. Service industries and organizations

Service industries have the provision of service products as their main function, usually seen as a residual sector that is a stubborn legacy derived from the goods-dominant past (Miles 2008, p. 116). This is because agriculture, mining, forestry, and their descendants, i.e. manufacturing and processing are the primary and secondary stages of economic activity (Fitzsimmons & Fitzsimmons 2008, p. 6). The division to primary, secondary and tertiary stages of economic activity is only a starting point for classifying services. Greenfield (1966, p. 1) divides services in two categories, *producer* services and *consumer* services. This division is the same as business services and consumer services (Martinelli 1991, p. 18; Toivonen 2004, p. 19). Stanback (1979, p. 18) adds to this by suggesting a division between expert-based business services and traditional business services by bringing out the concept of *advanced business services*[1], something that is still business services but which lies on the knowledge and expertise of its employees.

Some other classifications include private services and public services, marketed services and non-marketed services, mass services and customized services among others (see e.g. Johnston & Clark 2008; Toivonen 2004; Miles et al. 1995). In order to comprehend knowledge-intensive business services, some classifications are further analyzed next.

For instance, Miles et al. (1995, p. 24) differentiates services through market type (state, consumer, mixed and producer) and production type (physical service, person-centered and information service), which sees professional services as information services in a business-to-business context. This classification is somewhat similar to Silvestro et al. (1999, p. 401), who use the volume-variety diagonal to separate high-volume mass services from high variety-low volume professional services, where professional services are seen as people-focused, process oriented and highly customized.

The division of service factories, professional services and mass services is important, because each category includes specific managerial issues. *Service factories*, e.g.

[1] The concept of advanced business services is important, as Toivonen (2004, p. 25) argues that this group of services was later determined as knowledge-intensive business services.

airlines, are low in customization and interaction as well as labor intensity whereas *professional services*, e.g. management consulting, are high in interaction, customization and labor intensity, yielding a different managerial environment (Lovelock 1992, p. 39). Johnston & Clark (2008, p. 197) add one concept to the mix, by suggesting that professional services should be divided into professional services and professional service shops. This is supported by Lovelock's (1992, p. 36) view on managerial issues confronted by different service types, illustrated in figure 6.

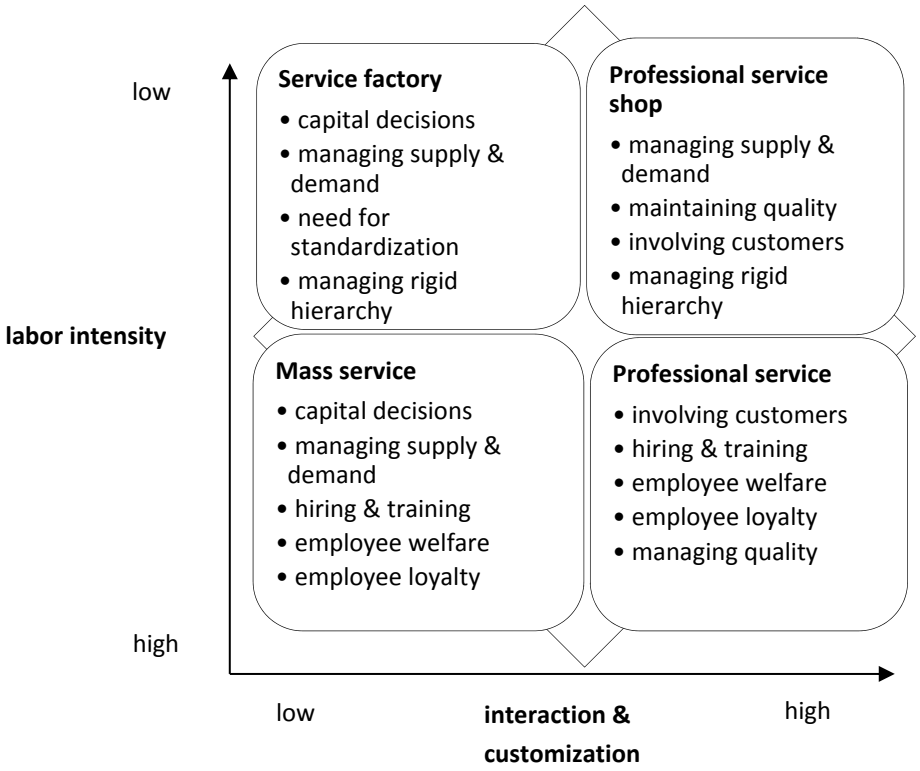

Figure 6: Managerial challenges in service types (adapted from Lovelock 1992, p. 36).

As seen from figure 6, one simply cannot run a service business through a set of holistic rules and procedures, as each service organization is relatively different and has its own specific managerial challenges. However, even though professional services and professional service shops are somewhat similar in simple categorizations (e.g. Miles et al. 1995; Silvestro et al. 1999; Martinelli 1991) they are different from a managerial perspective and hence need to be clarified. Lovelock's (1992, p. 36) proposition, distinguishing the two by labor intensity is not sufficient for practitioners.

A better viewpoint is given by Johnston & Clark (2008, p. 242), suggesting that professional service shops attempt to deliver constant quality by *restricting the possibility to customize each service and to restrict the autonomy of its employees.* This makes a clear statement that professional service shops try to avoid the problems of managing a professional service organization by standardizing its operating procedures and restricting employee discretion in order to manage growth and consistent value delivery.

2.4. Knowledge-intensive business services

Within the knowledge-economy, many different terms have been used to describe successful contemporary organizations, including the knowledge-based view (Kogut & Zander 1992), the knowing organization (Choo 1998), the knowledge company (Stewart 1997; Sveiby 1997), the knowledge-based business (Davis and Botkin 1994), the knowledge-based organization (Leonard-Barton 1995), the knowledge-creating company (Nonaka and Takeuchi 1995), and the learning organization (Senge 1994). *In the organization sciences literature, this development is reflected in the concept of the knowledge-intensive firm,* a broad concept that withholds different organizations in both consumer and business markets (Rylander & Peppard 2009, p. 2).

Understanding these knowledge-intensive firms and hence knowledge-intensive business services requires understanding two key things. First, what is meant by knowledge. Second, what are business services and what is knowledge-intensity in regard to this concept. These will be discussed next.

2.4.1. Knowledge and information

Dividing knowledge and information is common for academic research and the standard categorization adds the notion of data to the context (see e.g. Awad & Ghaziri 2004; Davenport & Prusak 1998; Thierauf, 2001). Starting with knowledge, it is something created and organized by the flow of information, anchored on the commitment and beliefs of its holder (Nonaka 1994, p. 15). This means that knowledge is identified with information-produced or sustained belief, but the information received is relative to what he or she already about the possibilities at the source (Dretske 1981, p. 86). Consider management consulting, where consultants do possess information of e.g. strategic management, but the person consulted may see this as either information or knowledge depending on whether or not he or she can actually adopt it as something that is not known already. Thus knowledge is information stored within an individual and its beliefs, and is usually difficult to express (Polanyi 1966, p. 4).

So if knowledge is roughly something created by the flow of information and stored within its holder, what is information? Dretske (1981, p. 44) argues that information is a commodity capable of yielding knowledge and what information a flow of messages carries is what we can learn from it. Hence information is the ways of creating and communicating knowledge. Both Nonaka (1994) and Drestke (1981) have addressed knowledge and information by their philosophical meaning, but for the purposes of this research, a more simplified definition is in order.

Information is *explicit knowledge* codified in books, reports, patents etc. *Tacit knowledge* (or *implicit knowledge*) is, in a professional environment, the know-how that is acquired through processes by experts and professionals from routines and learning-by-doing and is extremely hard to transform to an explicit form. (Miles et al. 1995, p.

15.) Both tacit knowledge and explicit knowledge is present in individuals, groups, organizations and networks, promoting a knowledge-based view on organizational management (Kogut & Zander 1992, p. 388). However, tacit knowledge is regarded as more valuable in an organizational management perspective as it is closer to action and can be utilized to make sounder decisions (Davenport & Prusak 1998, pp. 5-6). Furthermore, tacit knowledge is not just the know-how of professionals, experts and managers, as it also includes the mental models and cognitive knowledge of the aforementioned actors (Alavi & Leidner 2001, p. 113).

Since the scope of this research is not macro-economic but focuses on single organizations, knowledge is herewith seen as the *know-how and the cognitive capabilities of organizational actors, such as individuals, groups and business units*. Information is regarded as explicit knowledge, such as reports, statements, white papers and other forms of knowledge that are not stored within a single individual, group or other entity. As Alvesson (2004, p. 54) points out, knowledge is something that solves problems but there is no way of knowing what it particularly is. However, it seems to accomplish something good and valuable – at least in most cases.

2.4.2. Business services and knowledge-intensity

Since the mid-1990s, business services based on expertise have been referred to with the term *knowledge-intensive business services* (Toivonen 2004, p. 2). Using such a term is ambiguous, because even though knowledge-intensive business services are different from *business services*, as they can be referred to as *advanced* corporate services or *professional* business services (von Norderflycht 2010, p. 156; Stanback 1979, p. 18; Toivonen 2004, p. 25), depending on the context and situation in which the definition is presented. So, if professional services, advanced business services and knowledge-intensive business services can be seen as similar concepts, what is the difference between these?

First of all, professional service firms can be seen as examples of the aforementioned knowledge-based organization (Morris & Empson 1998, p. 609). This suggests that knowledge-based organizations are an umbrella term, which includes various types of firms such as professional service firms. However, in the context of business services, each of these knowledge-intensive firms, as well as professional service firms, rely on the problem solving capacity of their employees and provide tailored services to corporate clients (McGrath 2005, p. 550). Moreover, the work done in these organizations is said to be of an intellectual nature and where well educated, qualified employees form the major part of the workforce (Swart & Kinnie 2003, p. 61). This promotes the notion that knowledge-intensive business services rely heavily upon advanced knowledge, i.e. their employment structures are weighted towards experts and professionals of all types (Miles et al. 1995, p. 28). Therefore, professional services and

knowledge-intensive business services are similar in many ways and can be seen as interlinked terms, at least on broad terms.

Alvesson (2004, p. 21) notes that the distinguishing characteristics of a knowledge-intensive business service organization are based on its workforce, having highly qualified individuals doing knowledge-based work with a high degree of autonomy. However, von Nordenflycht (2010, p. 156) argues that relying on this knowledge is only a part of professionalism, suggesting that knowledge-intensity is a characteristic of professional business services, not the driving force of professionalism itself. This is not to say that knowledge-intensity is essential, but that it is *one* of the characteristics of a professional business service and should be looked through *degrees* of intensity instead of a question of whether or not an organization is indeed knowledge-intensive. Despite this ambiguity, knowledge-intensive business services can be defined with industry-level classifications, such as NACE (see e.g. Muller & Doloreux 2009, p. 66; Hipp 1999, p. 93), which gives insight on what knowledge-intensive business services actually are. Table 3 provides a brief listing of knowledge-intensive business services within the NACE classification.

Table 3: NACE classification of knowledge-intensive business services (adapted from Muller & Doloreux 2009, p. 66).

NACE ID	DESCRIPTION
72	Computer and related activities
721	Hardware consultancy
722	Software consultancy and supply
723	Data processing
724	Database activities
725	Maintenance and repair of office, accounting and computing machinery
726	Other computer-related activities
73	Research and development
7310	Research and experimental development in natural sciences and engineering
7320	Research and experimental development in social sciences and humanities
74	Other business activities
741	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy; holdings
7411	Legal activities
7412	Accounting, book-keeping and auditing activities; tax consultancy
7413	Market research and public opinion polling
7414	Business and management consultancy activities
742	Architectural and engineering activities and related technical consultancy
743	Technical testing and analysis
744	Advertising
7484	Other business activities n.e.c.

Classifying knowledge-intensive business services with industry categorizations is common, but not very useful since knowledge-intensity can reside in many forms and such categorizations leave out new services and activities that are indeed knowledge-intensive, but not within the classification (Hipp 1999, p. 93). Hence a better definition is not industry-specific, but dynamic, that would embrace knowledge in a way that does not specify different types of knowledge or industries, but that promotes the fact that knowledge-intensive business services have knowledge as their main resource (Muller & Doloreux 2009, p. 66).

Such a definition is proposed by Bettencourt et al. (2002, p. 273), arguing that knowledge-intensive business services are organizations that *primarily add value through the accumulation, creation or dissemination of knowledge for the purposes of the customer and which have other businesses are their main clients.* For the purposes of this research, it is sufficient to use this definition and to acknowledge that knowledge-intensive business services consist both technology-based and managerial and business related professional services, relying on a professionalized workforce (see further categorizations from Miles et al. 1995, pp. 28-30; Strambach 2001, p. 54; Werner 2001, p. 51; Toivonen 2004, p. 30). More important than the classifications presented earlier is to comprehend the aforementioned definition of knowledge-intensive business services, which was that knowledge-intensive business services are such organizations that primarily add value through the accumulation, creation or dissemination of knowledge for the purposes of the customer and which have other businesses are their main clients (Bettencourt et al. 2002, p. 273; Miles et al. 1995, p. 28). Furthermore, knowledge-intensity is here seen as a reflection of the extent to which a service activity requires highly skilled service operatives who exercise professional or technical capabilities to produce situation-specific results (Miles 2008, p. 117).

Given the NACE-classification and the definition of knowledge-intensive business services, it can be seen that knowledge-intensive business services is a broad concept. Literature has, however, distinguished some categories of KIBS. Miles et al. (1995, pp. 28-30) propose that knowledge-intensive business services can be roughly divided into traditional professional services and new technology-based services. The division is used widely since, but is usually referred to as T-KIBS (technology KIBS) and KIBS (see e.g. Toivonen 2004, p. 29). Technology driven knowledge-intensive business services are seen as more innovative, as they have been argued to have a high propensity to undertake in innovative activities (Miles 2001, p. 13; Howells 2000, p. 9). This is interesting in the light of this research, since the scope has both technology-driven knowledge-intensive business services and the more traditional, so-called neo-PSFs (see von Nordenflycht 2010, p. 165). Whether or not these technology-driven knowledge-intensive business services are called T-KIBS, ICT-KIBS, technology developers, new technology-based KIBS or something else, the focal point is to understand that knowledge intensity in itself may have a different meaning in different firms (e.g. technological vs. managerial). It is an organizational characteristic, that is yet

to be accurately described or measured (Käpylä et al. 2011, p. 315). However, in this research, the division between the neo-PSFs and technology will be used, but it will be used as a degree, not divided into static groups. Figure 7 illustrates this division with some key examples that are appropriate for this research.

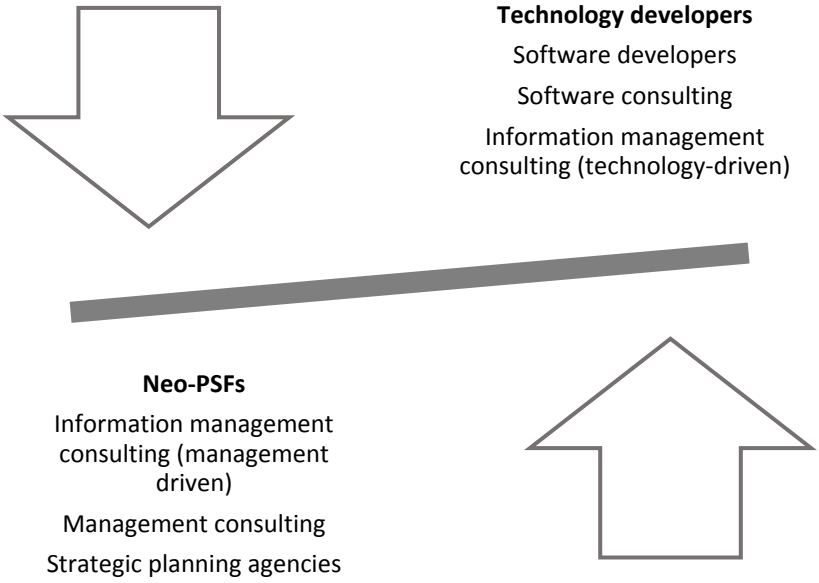

Figure 7: Types of KIBS (classification adopted from von Nordenflycht 2010, p. 165).

Given the division in figure 7, the types of knowledge-intensive business services are overlapping and converging. T-KIBS (i.e. technology developers) have become more and more like neo-PSFs, adding management consulting to complement the traditional software-driven service portfolio. At the same time, management consulting companies are adopting new ways of utilizing technology to their offerings, in order to stay competitive in the ICT-based economy. Therefore, a classification should not be rigid, but it does work well when distinguishing some managerial implications of different types of KIBS.

2.5. Implications for new service development and innovation

The previous chapters have analyzed the nature of services, service industries, knowledge and knowledge-intensive business services. To understand their relations to new service development and innovation, some key aspects should be pointed out. First, the IHIP-characteristics (see e.g. Andreassen & Lanseng 2010, p. 213; Tronvoll et al. 2011, p. 562) mentioned have their effects on new service development (Cooper & Edgett 1999, p. 19):

- Intangibility:
    - makes idea imitation relatively easy
    - increases risk of new service proliferation
    - increases risk of information overload with operations staff and clients
    - hinders development as no physical prototypes can be used
    - creates a risk of conducting development processes too quickly
    - makes market research difficult
    - makes marketing difficult and promotes image-related factors
    - makes measuring costs, revenues – and thus success or failure extremely difficult
- Heterogeneity:
    - lack of standardized service delivery systems
    - quality control becomes an issue
    - the right level of standardization is required
    - need for control and management systems
- Inseparability:
    - need for increased organizational involvement
    - increased importance of service delivery systems
    - difficulties allocating costs
    - requires high levels of customer input and involvement
- Perishability:
    - difficulties managing supply and demand
    - need for interaction across departments and functions
    - need to mix people and technology

(Cooper & Edgett 1999, p. 19).

Second, as service research is highly derived from the marketing perspective (see e.g. Brax 2007, pp. 14-15), marketing should be treated as an important perspective in new service development as well. As the service-centered view is now a cornerstone in marketing (Vargo & Lusch 2004a, p. 4), it can be argued that new service development should be linked to this paradigm. One way of doing this is to analyze the foundational premises of the service-dominant logic, since it provides an organizing framework for understanding the economic phenomena in the service-centered view of marketing (Maglio & Spohrer 2008, p. 19; Lusch & Vargo 2011, p. 1303). Therefore, invoking the foundational premises of the service-dominant logic to new service development is therefore essential for conducting insightful research. Table 4 links these premises to service innovation.

Table 4: The foundational premises and links to service innovation (adapted from Ordanini & Parasuraman 2012).

		JUSTIFICATION	LINK TO SERVICE INNOVATION
FP1	Service is the fundamental basis of exchange	The application of operant resources, i.e. knowledge and skills, is the basis for exchange	Services should not be treated as a special category of products in innovation management (Ordanini & Parasuraman 2012)
FP2	Indirect exchange masks the fundamental basis of exchange	Goods, monetary elements and organizations form a mask over the service-to-service nature of exchange	Goods, among other facilitating and 'masking' elements are only parts of service innovation, not vice-versa (Sole et al. 2009). Goods and other distribution mechanisms are necessary for creating the pre-requisites for the service, and thus service innovation (Njissen et al. 2006; Edvardsson 1997)
FP3	Goods are a distribution mechanism for service provision	Goods deliver value through the service they provide	
FP4	Operant resources are the fundamental source of competitive advantage	The comparative ability to cause desired change drives competition	Knowledge interfaces between operand and operant resources is vital for service innovation (Ordanini & Parasuraman 2012)
FP5	All economies are service economies	Service is becoming ever more apparent in all aspects of any economy	Given the importance of new service development as a competitiveness driver, our current understanding of it is significantly inadequate (Menor et al. 2002).
FP6	The customer is always a co-creator of value	Value creation is interactional	Customers have competences that should be used in service innovation and customer knowledge and skills should be collected in new service development in order to increase the volume of innovation (Ordanini & Parasuraman 2012)
FP7	The enterprise cannot deliver value, but only offer value propositions	An enterprise cannot deliver value by itself but it can offer its applied resources for value creation	
FP8	A service-centered view is inherently customer oriented and relational	Service is customer-determined and co-created and thus inherently customer oriented	Customer orientation is a form of innovative behavior, but service innovation usually sees customer orientation as only a hygiene factor, not as a success inducing approach (Ordanini & Parasuraman 2012).
FP9	All economic and social actors are resource integrators	The context of value creation is within a network of networks	Business partner collaboration, open innovation and service network collaboration will increase innovation capability by increasing the radicalness of service innovation (Ordanini & Parasuraman 2012).

FP10	Value is always determined by the beneficiary	Value is contextual, beneficiary-viewed and only determined by the consumer or beneficiary within a specific context and situation	New service development should be concerned with value facilitation (Njissen et al. 2006; Edvardsson 1997). New services should enable independent, customer-based value creation (Grönroos 2011).

Third, knowledge-intensity and the notion of business services give additional characteristics to new service development. Knowledge itself is an ambiguous concept and relatively difficult to develop to a service or product (Alvesson 2004, p. 98). Knowledge-intensity in the workforce, on the other hand, is grounded on employees that have a high degree of autonomy and that are usually experts and professionals of all types (Alvesson 2004, p. 21; Miles et al. 1995, p. 28), making new service development procedures and systematic processes difficult to implement as the employees are not specifically fond of hierarchy and formalization.

Furthermore, knowledge-intensive organizations are suspect to criticism and debate on their output, as the quality of the services provided is difficult to communicate and convince (Clark 1995, p. 53). This invokes the need for managing client expectations in order to control the perceived quality of the final output (O'Farrell & Moffat 1995, p. 120; Løwendahl 1997, pp. 33-34). Quality control is therefore the key issue for new service developers in a knowledge-intensive organization, since the workforce does not adapt to rigid processes that well and the quality of the produced service, i.e. knowledge itself, is difficult to express (von Nordenflycht 2010, p. 160). Therefore, one essential factor in new service development in a knowledge-intensive context is the management of interaction which leads to perceived quality, as traditional marketing efforts seldom produce good results (Alvesson 2004, pp. 108-109).

Another characteristic affecting new service development in knowledge-intensive business services is the customization level and the amount of tailored services offered to customers (e.g. Silvestro et al. 1999, p. 401; Lovelock 1992, p. 39), which leads to the custom-tailored –paradox: efficiency and workforce productivity requires the right amount of standardization within the firm, but customer needs are only fulfilled with tailored services. Hence knowledge-intensive business services may have multifaceted problems (problems with resourcing, low profits, low efficiency etc.) when creating a 'new', tailored service for each customer but may also experience a negative market effect when creating a new standardized service for all of the customers (Muller & Doloreux 2009, p. 69). In short, new service development should treat these characteristics in a way that creates competitive advantage at a fair price. This will be analyzed next.

3. NEW SERVICE DEVELOPMENT

3.1. Introduction to new service development

Changing technologies, mergers, deregulation, increasingly demanding customers, fierce competition and other events in the globalized economy have forced managers to develop and launch new services (Edgett 1994, p. 40; Gordon et al. 1993, p. 135). Even though new service development publications have doubled since the 1990's to the early 21st century (de Jong et al. 2003, p. 845), it is safe to say that little research has been conducted in the area of new service development and innovation (Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175). This is somewhat peculiar, as Njissen et al. (2006, p. 241) propose that even though there is greater interest in examining new service development, the research is dominated by products and systems rather than services.

New service development, service engineering and new product development are terms that usually used interchangeably (Bullinger et al. 2003, p. 276; Johne & Storey 1998, p. 184). As suggested earlier, there is one significant difference in new service development and new product development, which is that it is not the service itself that is developed and produced but the pre-requisites for it (Njissen et al. 2006, p. 242; Edvardsson 1997, p. 32). Given this significant difference in developing products and services, it is unexpected that there has not been more effort to develop a specific scientific model for new service development (Njissen et al. 2006, p. 241). The possible cause is that new service development is much more difficult to master in a normative way, because of the intangible, heterogenic, inseparable and perishable nature of services (Andreassen & Lanseng 2010, p. 213; Tronvoll et al. 2011, p. 562; Johne & Storey 1998, pp. 187-188). However, some models and frameworks for new service development do exist and are used in both practice and academia.

3.2. Process models for new service development

Empirical investigation in new service development suggests that the process of new service development and innovation is a critical success factor that managers need to understand in order to succeed in delivering innovative new services (Menor et al. 2002, p. 140). Furthermore, the lack of a specific scientific model for new service development is considered as a significant point of interest in new service development research (Njissen et al. 2006, p. 241). The first real attempt to generalize new product development and new service development in one model was made by Booz, Allen & Hamilton (1968, 1982). The *BAH* -model was applicable for products as well as

services, but as Edvardsson (1997, p. 34) noted, a generalization of the two is risky because of the differences between new product development and new service development processes. Donnelly, Berry and Thompson (1985) continued the work of Booz, Allen & Hamilton (1968) by creating their own so-called *translational*[2] model that was similar to Bowers' (1985) representation of the original BAH-model. As such, the first model presented by Booz, Allen & Hamilton (1968) became an industry standard, effecting all translational models for decades (Bowers 1985, Donnelly et al. 1985, Johnson et al. 1986; Anderson & Pennington 1992; Tax & Stuart 1997). The original model that was adapted by Bowers (1989, p. 18) to a service-context consisted of 8 steps:

1. Develop a business strategy (a long-term strategic direction for the firm)
2. Develop a new service strategy (a plan that outlines the type of new services to be developed
3. Idea generation (a formal process for soliciting ideas for new services)
4. Concept development and evaluation (refining and expanding the concept of the new service)
5. Business analysis (determining the feasibility and profitability of the new service)
6. Service development and evaluation (establishing standards for performance of the new service)
7. Market testing (testing the marketing mix variables and of the service itself)
8. Commercialization (introduction to the public)

The normative model of new service development is rather difficult to accomplish, as most of the activities and tasks presented are performed in a non-procedural way. Furthermore, any translational model is lacking a holistic view on new service development, which has promoted the creation of more comprehensible models (Fitzsimmons & Fitzsimmons 2000, p. 11). The one presented by Scheuing & Johnson (1989, p. 30) deserves some attention at this point. The model is exhaustive, but useful in a way that is comprehensible and creates an understanding of the complexity in new service development. However, some key activities and tasks are hard to manage in a purely procedural way, because of the iterations and feedback-loops involved in new service development (Kinnunen 2003, pp. 29-32). The model is presented in figure 8.

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[2] Fitzsimmons & Fitzsimmons (2000, p. 11) summarize the studies of new service development in *partial models of new service development, translational models of new service development* and *comprehensible models of new service development.*

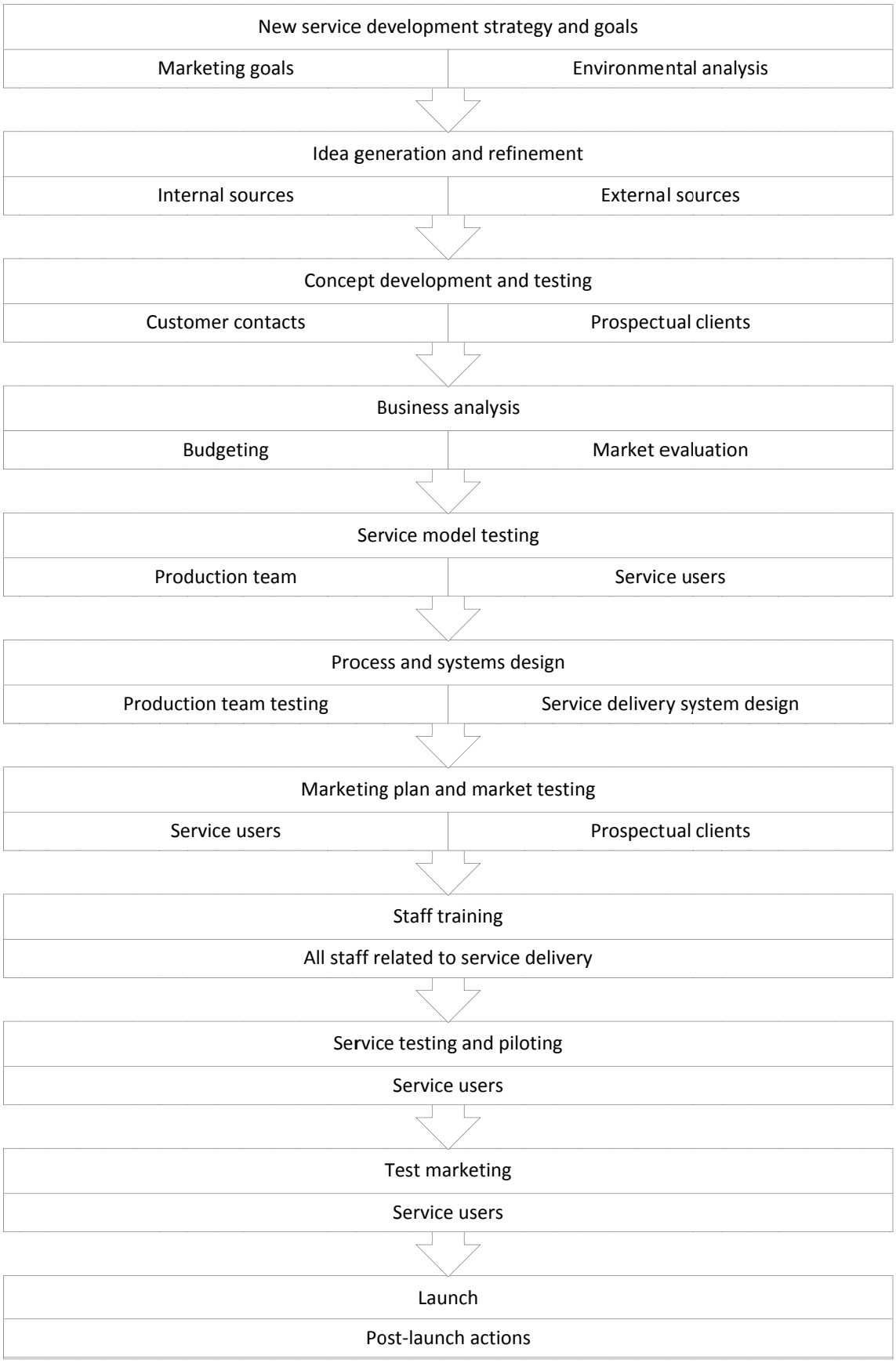

Figure 8: The simplified Scheuing & Johnson (1989, p. 30) model of new service development.

Bullinger et al. (2003, p. 281) have clearly adapted the key tasks and activities of the translational Booz, Allen & Hamilton (1968) model and the comprehensible Scheuing & Johnson (1989, p. 30) model, giving a more generalized view on new service development but keeping the procedural aspect in place. Overall it seems that researchers fluctuate between broad and detailed, starting from the 8-step model from Booz, Allen & Hamilton (1968, and its remnants from Bowers 1985, Donnelly et al. 1985, Johnson et al. 1986; Anderson & Pennington 1992; Tax & Stuart 1997), going into a more detailed, 15-step model from Scheuing & Johnson (1989, p. 30) and again falling back to the broad concept of a 6-step model from Bullinger et al. (2003, p. 281), concerning the same tasks as its priors but in a different classification.

3.2.1. Taking a step back from normative models

The most recent trend seems to be moving away from a normative model, building such concepts that do have a process orientation but are more simplistic than their ancestors (Dörner et al. 2011, p. 41; de Jong et al. 2003, p. 33; Johnson et al. 2000, p. 18). Furthermore, these models incorporate key activities as *parts or guidelines* of their more generalized components, rather than steps of the process. This gives more flexibility and helps to use the models in practice. First, de Jong et al. (2003, p. 33) presented a two-staged model that holds the more detailed steps within the two stages, illustrated in figure 9.

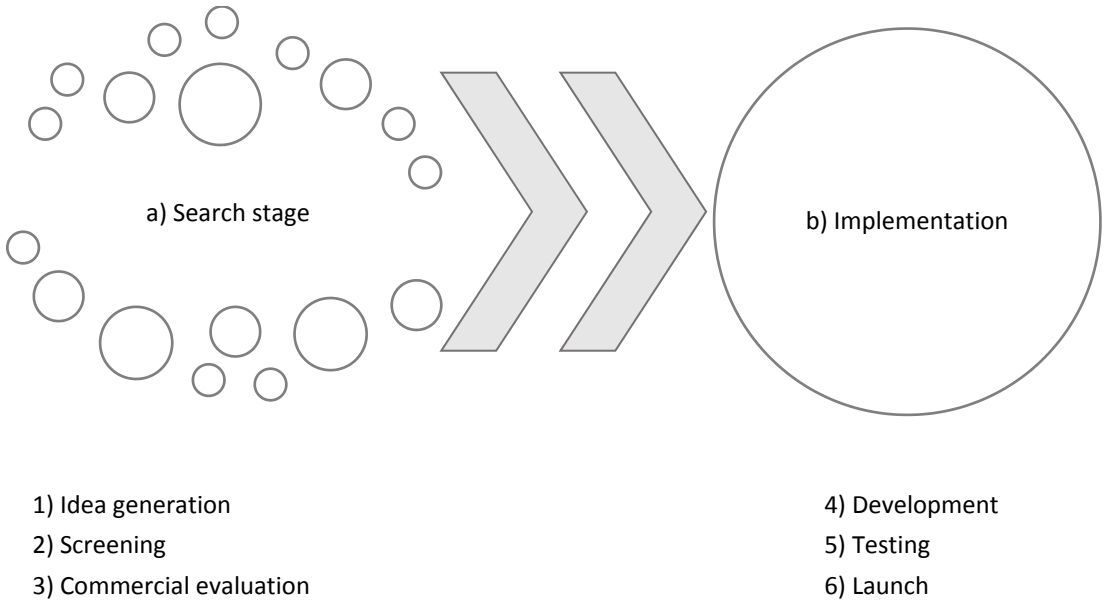

Figure 9: A two-staged model for new service development (adapted from de Jong et al 2003, p. 33).

The model above is different from the normative models presented earlier (see e.g. Bowers 1985, Donnelly et al. 1985, Johnson et al. 1986; Anderson & Pennington 1992; Tax & Stuart 1997), because it does not form a clear set of activities and tasks to be

completed in a structured process. Moreover it clearly states that a new service development process has a search stage, sometimes referred to as the *fuzzy front-end* of innovation and a development stage, or the *speedy back-end* of innovation (Deschamps 2005, p. 32). This division is helpful, as the activities of the search-stage and development stage are relatively different and these stages may incorporate different teams within their activities. There is one major drawback in the model presented by de Jong et al. (2003, p. 33), which is that it does not take into account the organizational factors (*enablers*) that make it possible to produce a service. Taking these enablers into account is somewhat essential since it is not the service itself that is developed and produced but the pre-requisites for it (Njissen et al. 2006, p. 242; Edvardsson 1997, p. 35).

Johnson et al. (2000, p. 18) have taken these enablers into account in their cyclical model for new service development, presented in figure 10.

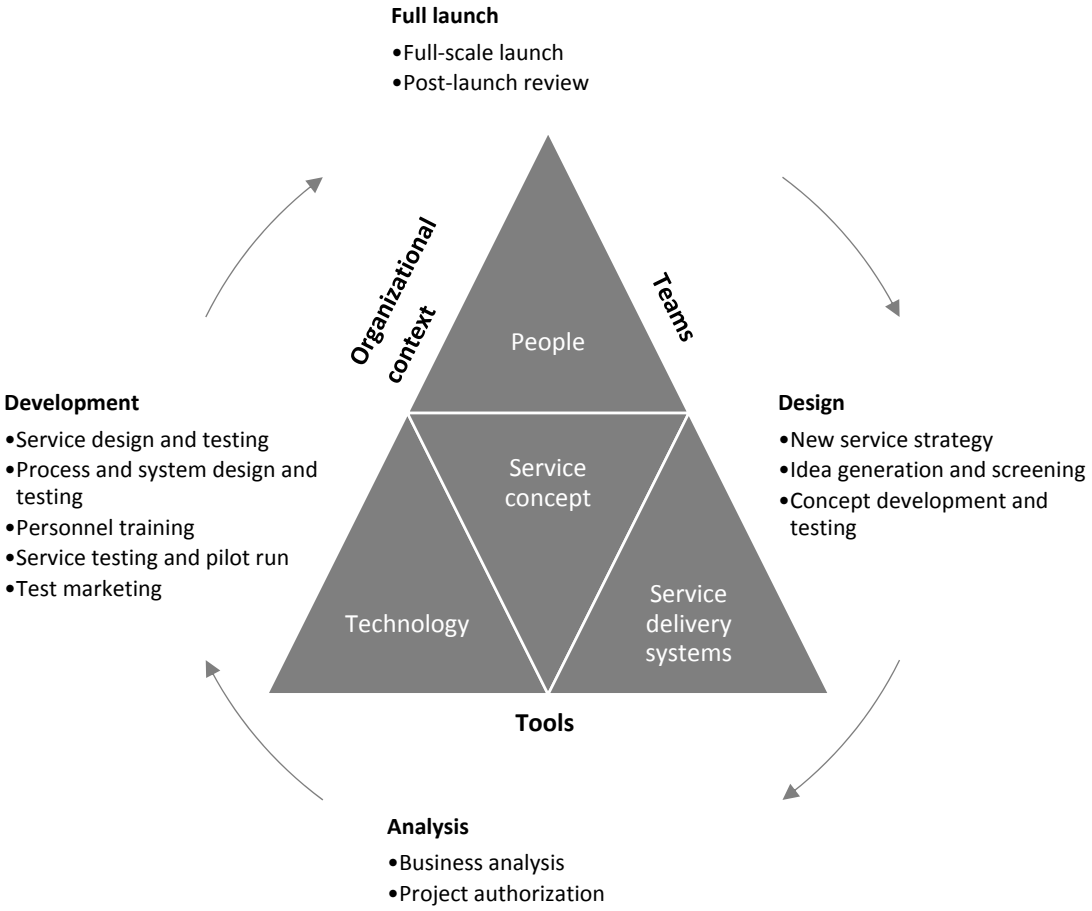

Figure 10: The cyclical model for new service development (adapted from Johnson et al. 2000, p. 18).

Whereas the model from Johnson et al. (2000, p. 18) brings out the enablers of new service development and innovation, it leaves out the tools and techniques that are

required to successfully manage the process. This is something that Dörner et al. (2011, p. 41) have understood in their innovation process for services. Even though the main stages are again relatively similar to the ones presented earlier (*definition, development* and *market launch*), the model has some input into the practical "*how-to*" of new service development. Considering that the earlier models of Booz, Allen & Hamilton (1968), Bowers (1985), Donnelly et al. (1985) and even the more contemporary processes of de Jong et al. (2003, p. 33) and Bullinger et al. (2003) only look at w*hat needs to be done* rather than *how it is done*, new service development practitioners are left struggling to understand what techniques and tools should be used to complete such activities described in the process models of new service development.

This not the case in new product development where practitioners can use the house of quality (Politis 2003, pp. 183-188), object stimulation (McFadzean 1998, p. 135), roadmaps (Phaal & Muller 2008, p. 43), morphological analysis (Higgins 1996, p. 377), SCAMPER (Serrat 2009, pp. 2-3), guided fantasy (McFadzean 1998, p. 136), wishful thinking (VanGundy 1988, p. 127) among others (see e.g. Proctor 2006 for an extensive review on these techniques). It is not explicitly argued that new service development cannot use such techniques, but the techniques are development from a goods-dominant perspective. New service development can use service blueprinting, prototyping and trend analysis to define and develop services, but the use of a more creative toolset, like in new product development, seems to be dismissed in the field of services.

3.2.2. Leaving processes out - frameworks for new service development

The last two chapters analyzed the process models of new service development, taking a look on how process models have evolved through time. The first model of Booz, Allen & Hamilton (1968) was clearly a paradigm for at least two centuries, as it did work as a basis for most of the models in the 1970's and 1980's (see e.g. Bowers 1985, Donnelly et al. 1985, Johnson et al. 1986; Anderson & Pennington 1992; Tax & Stuart 1997). The evolution continued from a more detailed, more normative perspective (see Scheuing & Johnson 1989) back to a generalized model for new service development (see e.g. Bullinger et al. 2003, p. 28).

After noticing that new service development and new product development are in fact different in the light of innovation (Edvardsson 1997, p. 34) new models have incorporated some key tasks and enablers that are service-specific, rather than universal for both services and products (see e.g. Johnson et al. 2000, p. 18; Njissen et al. 2006, p. 242; Dörner et al. 2011, p. 41). However, no single model has attained a paradigmatic position in new service development (Johne & Storey 1998, p. 201), suggesting that new service development and innovation may not be ideal for a procedural, normative way of thinking. One reason for this may be that new product development and new service development are somewhat similar looking outside-in, but from an internal

perspective new service development does promote organizational, cultural factors more than new product development (Njissen et al. 2006, p. 242).

As process models and a strict normative way of development may not be ideal for new service development and innovation, some scholars have introduced dimensional models and frameworks that point out the key concepts and activities of development, but do not constitute any *process* to it. These non-procedural models are *product models*, which analyze what a service does instead of how the outcomes are achieved (Bullinger et al. 2003, p. 278).

Den Hertog (2000, p. 495) proposed a four-dimensional model for new service development and innovation that leaves out the process of development and focuses on the dimensions that create innovations. The model constitutes of a *concept dimension*, a *client interface dimension*, a *service delivery system dimension* and a *technological options dimension.* This dimensional thinking points out that a service innovation can be seen as a mix of different dimensional innovations or even just a single innovation in one of the dimensions. Hence organizations could focus on a dimension that delivers most value in the competitive environment, or a dimension that is considered to be a core capability. Goldstein et al. (2002, p. 124) present a similar model that connects different dimensions in service design research to one framework, illustrated in figure 11.

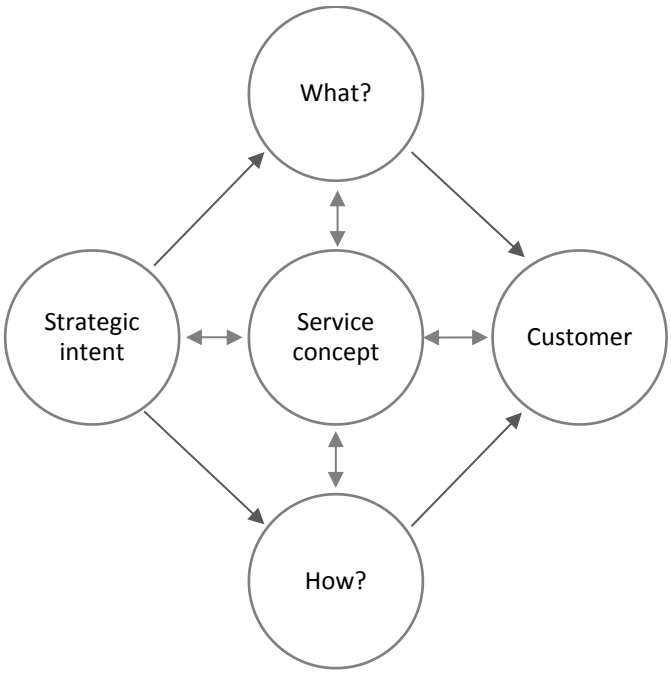

Figure 11: The service concept –model (adapted from Goldstein et al. 2002, p. 124).

The service concept –model is particularly interesting in the light of new service development and innovation, because it points out the key aspects of development. Looking back at the normative models (see e.g. Booz, Allen & Hamilton 1968; Bowers 1985, Donnelly et al. 1985, Johnson et al. 1986; Anderson & Pennington 1992; Tax &

Stuart 1997; Scheuing & Johnson 1989) and the more contemporary staged model of de Jong et al. (2003, p. 33), it can be argued that these models are leaning towards one or two elements of the service concept, not really "getting the big picture". To clarify this statement, table 5 has summarized the activities and elements of the past process models in the light of the service concept model by Goldstein et al. (2002, p. 124).

Table 5: A service-concept –based comparison of new service development models.

MODEL	STRATEGIC INTENT	CUSTOMER	WHAT?	HOW?
Booz, Allen & Hamilton (1968)	Includes a new service strategy and a business analysis phase	-	Idea generation, screening & evaluation, testing, commercialization	-
Bowers (1989)	Includes a new business strategy, new service strategy and a business analysis phase	Uses market testing	Uses broad concepts like idea generation and concept development	-
Scheuing & Johnson (1989)	Includes a new service strategy and business analysis	Uses customer-oriented concept development, but most tasks can be seen as customer-focused	Uses broad concepts like idea generation and concept development, service design and testing	Includes process and system design
Shostack (1984)	-	Includes marketing activities, both pre- and post-market	Uses detailed service identification activities	Includes service blueprinting
Cooper & Edgett (1999)	-	Includes preliminary and detailed investigation activities	Uses ideation activities	Has a development-activity that is not further detailed
Johnson et al. (2000)	Includes a new service strategy and business analysis	Uses piloting, and marketing programme design & testing	Includes idea generation and concept development in the design-phase	Includes process and system design
de Jong et al. (2003)	-	-	Search stage: idea generation, screening, commercial evaluation	Implementation activities: development, testing, launch

As seen in table 5, most models do not have *explicitly specified* activities that relate to all aspects of the service concept –model from Goldstein et al. (2002, p. 124). Of course some activities such as commercialization or concept development can be seen as holistic activities that relate to all elements, but for the purposes of a service development practitioner or a manager this might be insufficient because one needs to understand the tasks and sub-processes included in them. This will be assessed next.

3.3. Key activities in new service development

Goldstein et al. (2002) proposed that a service concept is the missing link in service design research as it ties the aspects of strategy and customers together, and answers what is the service and how is it designed and delivered. Hence, the key activities of new service development should assess all of these aspects in a formal manner in order to provide a sound basis for the concept. Looking back at the comparison of process models in the previous chapter, Scheuing & Johnson (1989) and Johnson et al. (2000) seem to have the most comprehensible models of new service development in regards to the service concept, because they explicitly address the problem of service delivery system design.

However, this comparison is not sufficient for the purposes of finding key activities but it does point out that *models address the elements of the service concept differently* – hence with a specific focus. To provide a more comprehensive understanding, a comparison of the process models from Booz, Allen & Hamilton (1968), Bowers (1985), Donnelly et al. (1985), Johnson et al. (1986), Anderson & Pennington (1992), Palmer & Cole (1995), Scheuing & Johnson (1989), Cooper & Edgett (1999), Johnson et al. (2000) and de Jong et al. (2003) is presented in table 6, analyzing key- and related activities from different models.

Table 6: Key new service development activities presented in relevant literature.

ACTIVITY	EXPLICITLY STATED AS AN ACTIVITY IN:	RELATED TO:
Strategic planning	Bowers (1985), Johnson et al. (1986)	Strategic guidelines (Donnelly et al. 1985), formulation of new services strategy (Johnson et al. 2000)
Idea generation	Bowers (1985), Johnson et al. (1986), Scheuing & Johnson (1989), Booz, Allen & Hamilton (1968), Cooper & Edgett (1999), Johnson et al. (2000), de Jong et al. (2003)	Specification (Anderson & Pennington 1992), assessing the new service concept (Tax & Stuart 1997)
Idea screening	Donnelly et al. (1985), Scheuing & Johnson (1989), Booz, Allen & Hamilton (1968), Johnson et al. (2000), de Jong et al. (2003)	Concept evaluation (Bowers 1985), verification (Anderson & Pennington 1992), preliminary/detailed investigation (Cooper & Edgett 1999)
Business analysis	Bowers (1985), Scheuing & Johnson (1989), Booz, Allen & Hamilton (1968), Johnson et al. (2000)	Analysis (Johnson et al. 1986), comprehensive analysis (Donnelly et al. 1985)
Service design and develop-ment	Johnson et al. (1986), Bowers (1985), Scheuing & Johnson (1989), Booz, Allen & Hamilton (1968), Johnson et al. (2000)	Development (Anderson & Pennington 1992), development (Cooper & Edgett 1999), development and testing (de Jong et al. 2003)
Service delivery system design	Johnson et al. (1986), Scheuing & Johnson (1989), Johnson et al. (2000)	Defining the service system processes and participants (Tax & Stuart 1997)
Commer-cialization	Bowers (1986), Booz, Allen & Hamilton (1968)	Marketing program design (Scheuing & Johnson 1989), marketing program design and testing (Johnson et al. 2000)
Introduction	Donnelly et al. (1985), Johnson et al. 1986)	Full-scale launch (Scheuing & Johnson 1989), deployment (Anderson & Pennington 1992), market launching (Cooper & Edgett 1999), full-launch (Johnson et al. 2000), launch (de Jong et al. 2003)

Looking at the activities presented in table 6, it seems that models do address the most important stages of new service development, such as idea generation, idea screening, service delivery system design and commercialization (Alam & Perry 2002, p. 522). However, some models (e.g. Scheuing & Johnson 1989; Bowers 1985) incorporate stages that are seen as unimportant (such as *test marketing*), whereas others may leave out the most important activities such as idea generation and screening (e.g. Booz, Allen & Hamilton 1968; Scheuing & Johnson 1989) of new service development[3].

Even though the activities presented in table 6 point out the recurring (and thus usually important) stages of new service development, Alam & Perry (2002, p. 527) introduce an additional activity that is considered as vital, but which are not analyzed in the models presented in table 6. This is the *formation of a cross-functional team.* This could be seen as a part of the *teams* –perspective in Johnson et al. (2000, p. 18) as a crucial enabler, but because of its relative importance (see Alam & Perry 2002, p. 522), it should be viewed as a main activity. Furthermore, because the service itself is never produced but the pre-requisites for it (Njissen et al. 2006, p. 242; Edvardsson 1997, p. 35), the *design and development of service delivery systems should be seen as essential* for successful new service development. Unfortunately, this is not the case in a variety of models (Booz, Allen & Hamilton 1968, Bowers 1985, Donnelly et al. 1985, Anderson & Pennington 1992, Palmer & Cole 1995, Cooper & Edgett 1999, de Jong et al. 2003). Using the knowledge on new service development literature presented earlier, this research summarizes the key activities as:

1. Strategic planning
    a. Understanding the strategic intent of the organization
    b. Promoting a service strategy
2. Building concepts
    a. Idea generation
    b. Idea screening and business analysis
3. Understanding customers
    a. Acquisition of customer information
    b. Customer participation
    c. Co-creation
4. Designing a service delivery system
    a. Service delivery design
    b. Process design
    c. Technology design
    d. Resource allocation

[3] Alam & Perry (2002, p. 522) have studied the relative importance of various stages in new service development, the study showed *test marketing* as least important and *idea generation* and *idea screening* as most important.

5. Commercialization
    a. Communicating value
    b. Communicating quality

As mentioned before, these activities appear frequently in new service development models and related theory. In order to understand what each activity consists of and what is its purpose in new service development the next chapters will analyze the five key topics presented above.

3.3.1. Strategy and the quest for strategic fit

"Without a strategy governing the choice of assignments and clients, a firm will develop in an ad-hoc, opportunistic way, based on the short-term maximization of assignments" (Ejler et al. 2011, p. 86).

New service development needs to be tied into corporate strategy and goals, identifying areas of interest for conducting new service development (Cooper & Edgett 1999, p. 23). This will help to reduce the aforementioned opportunism and create a sound basis for new service development.

Strategies of knowledge-intensive business service organizations are typically less deliberate, less controlled and less planned, suggesting that strategic management is in such a context more of an umbrella setting that a normative set of rules on how to run the business (Alvesson 2004, p. 124). However, any strategy for a service organization should find the *fit* between organizational goals, capabilities, resources and customer needs (Lovelock 1992, p. 393). This strategic fit represents the extent to which the new developed service fits to the status quo: managerial skills and preferences, company expertise, human resources, competencies, marketing capabilities and financial resources (Lightfoot & Gebauer 2011, p. 669). Therefore, strategic fit is actually the main concept behind strategic planning – finding the market and then adjusting the service and its delivery accordingly. This is not to say that strategic planning is market-driven, but to point out that the essence of fit means finding a synergy between what is to be created and what is the corresponding market need. Any service new to a particular market needs to achieve this synergy, whether or not the strategy is to penetrate a market or to diversify services within a current market (Edgett 1994, pp. 45-48).

Furthermore, when developing new services, the notion of fit is even more significant between new service development and business strategy (de Brentani 2001, p. 183; Martin Jr & Horne 1992, p. 54). This means understanding the corporate goals and their relation to the new services being developed and the development processes used, suggesting that strategic planning steers new service development in a way that supports organizational goals, invoking the need for service strategy development within strategic planning activities. If such well-defined strategic approach is lacking, there

will be no results, as there are basically no goals for the service development activity (Grönroos 2011, p. 468).

The service strategy used could be towards a highly standardized or a highly customized service offering, depending on the differentiation[4] and positioning strategy used (Lightfoot & Gebauer 2011, p. 669). Some knowledge-intensive firms (see Muller & Doloreux 2009 for the NACE categorization), data processing and database management for instance, may promote a differentiation and positioning strategy that is to be cost-effective and efficient whereas others, e.g. management consulting, could enhance a perception of quality and increased competitive advantage (see Shostack 1977, p. 77 for a similar reasoning). For knowledge-intensive business services, the strategic planning could steer the service portfolio towards new services that are in line with corporate goals and that guide the organization into the desired markets and new business.

3.3.2. Idea generation and concept development

It is understood that idea generation is an essential activity and thus it is widely adapted into the models of new service development (e.g. Booz, Allen & Hamilton 1962; Bowers 1986; Scheuing & Johnson 1989; Johnson et al. 2000; de Jong et al. 2003). This contradicts the practice of new service development, which is that services seem to happen, as opposed to being systematically constructed (see e.g. Njissen et al. 2006, p. 241; Cooper & Edgett 1999, p. 32; Martin & Horne 1992, p. 62; Lovelock 1992, p. 31; Dörner et al. 2011, p. 39; Menor et al. 2002, p. 136). One possible reason for this is that idea generation in a service context is ambiguous and thus somewhat difficult to transform into a more systemic activity – or at least this is the explanation as why a service development practitioner did not succeed whereas the competition did.

The heart of innovation lies in generating ideas, selecting the good ones and implementing them (Bessant & Tidd 2007, p. 10). An idea is something that is unrealized, unproven or untested (Gurteen 1998, p. 6). Ideas can arise inside and outside of the organization, as a genuine invention, a result from successful business partner or customer collaboration or from the imitation of competitors' products and services. As such, idea generation through imitation is a typical nuisance and an opportunity in the service sector, proving both opportunities and threats to service providers' ideas (Kelly & Storey 2000, p. 47).

Scheuing & Johnson (1989, p. 33) go on to note that despite the nuisance, competitor imitation is the most powerful method of idea generation. A more 'ethical' way of generating ideas, collaboration, is seen as most effective for radical innovation when

[4] Any differentiation strategy means roughly to create something that is perceived as unique industry-wide (e.g. Lovelock 1992, p. 404).

done with business partners, as opposed to incremental innovation, the main result from customer collaboration (Ordanini & Parasuraman 2012, p. 17). Whereas many different ways of acquiring ideas are possible, should new service development practitioners focus on imitation, instead of in-house innovation activities or on collaboration with business partners, instead of customers?

One might gain ideas from imitation, but service imitation is highly different from product imitation. Consider imitation from a product view; one might use reverse engineering to dismantle a product to understand its success, but one cannot dismantle a service in the same fashion. This means that an idea such as ’management consulting constitutes a good business’ is hardly enough for success. However, collaboration is more effective in way that is gives more insight on the idea at hand, since the idea is not acquired with ways that do not promote controversial issues. This contradicts the notion from Scheuing & Johnson (1989, p. 33), that imitation would be the most powerful method of idea generation.

In addition to looking for ideas from different stakeholders and actors in the competitive environment, new service developers should look more towards the notion of concepts. This is because the right amount of detail in service innovation resides in the service concept, a refined idea on what the service actually is (Miles 2008, p. 122; Goldstein 2002, p. 124). More importantly, the service concept is a formalized way of transforming the prerequisites of a service to customer value (den Hertog et al. 2010, p. 494). All of these notions suggest that the service concept is actually the ’idea’ new service developers should be looking at. Consider a mobile phone, for instance. Simply arguing that a mobile phone with no battery would be excellent (an idea) is hardly enough for business of even constitutes as innovation. However, having a refined idea on how this would work and what is the concept of such a product is much more valuable (see e.g. Bullinger et al. 2003, p. 277 for similar reasoning). Therefore, service development academics and practitioners could benefit from moving away from the fuzzy, non-controllable event of idea generation to a more systemic activity of concept generation and development, providing more possibilities for managerial activities and control.

The problem with a wide variety of new service development models is that idea generation and concept development are two different activities (the problem is seen in e.g. Bowers 1985; Johnson et al. 1986; Scheuing & Johnson 1989; Booz, Allen & Hamilton 1968; Cooper & Edgett 1999; Johnson et al. 2000; de Jong et al. 2003). Whereas idea generation is ambiguous, non-controllable and usually happening as a result of intuition, flair and luck, concept development takes a more structured approach to development and design.

This is not to say that idea generation should not be of essential importance, but to point out that it may not be controlled or managed, suggesting that service development

models should focus on controllable events, as they are mechanisms of control in essence. Furthermore, concept development makes screening possible as ideas rarely have information on the financial implications, market considerations, strategic plans and delivery systems used to analyze different concepts. Moreover, if well-defined and easily understood service concepts are lacking, service delivery will result in chaos (Grönroos 2011, p. 468).

3.3.3. Understanding and involving customers

It is understood that whenever creating and designing new services, the customer comes first (de Brentani 2001, p. 182). This is especially the case in knowledge-intensive business services as well, since most of the revenue generated usually comes from customer-driven tailored services (Muller & Doloreux 2009, p. 69). Hence a key competence in new service development is knowledge in customer needs identification and customer knowledge acquisition (Gordon et al. 1993, p. 138; Kelly & Storey 2000, p. 52). Customers contribute to new service development by stating needs, criticizing current services, identifying market gaps, suggesting desired features, providing feedback in concept testing among and communicating with other potential customers (Alam & Perry 2002, p. 527).

From a customer perspective, a customer or a client has needs, wishes and expectations. Needs are basic, whereas wishes refer to the way in which a customer wants to satisfy a need. Expectations are based on the aforementioned wishes and needs but are also influenced to a large extent by the service provider's image and reputation in the market. (Edvardsson 1997, p. 32.) This is essential, since knowledge-intensive firms are mostly in the business of managing expectations (O'Farrell & Moffat 1995, p. 120; Løwendahl 1997, pp. 33-34).

When the managing of expectations is not understood, some market-oriented companies strive to satisfy the needs and wants of customers by using focus groups and customer surveys to understand the use of current services, but these techniques seldom produce significant innovations (Matthing et al. 2004, p. 479). This is because performances, processes and deeds (as well as competences) cannot be quantified and analyzed as products, leaving out traditional ways of customer understanding.

To put this more practically, a product marketer's first task is to know his product in order to understand what it does for its customers. For tangible-dominant entities this is relatively straightforward, as a tangible object can be described precisely. It can not only be exactly replicated, but also modified in precise and duplicate ways. (Shostack 1977, p. 75.) Furthermore, traditional market research seldom results in disruptive innovation for knowledge-intensive firms because customers do not know how to give feedback and imagine something they have not experienced (Matthing et al. 2004, p.

479). Thus, traditional ways of customer-oriented new product development may be questioned in the light of services, especially in the case of knowledge-intensive firms.

One ways of understanding customers that service developers seem to find attractive is customer involvement. This concept has become a practice in new service development but is no justification to its merits (Magnusson et al. 2003, p. 112). As mentioned earlier, customer involvement and customer collaboration works best when the desired effect is on incremental service development, as opposed to radical innovation (Ordanini & Parasuraman 2012, p. 17).

Indeed, customers can help to build a service-centered view on new service development and provide insight on innovation (Matthing et al. 2004, p. 492). However, involving customers is not something that should be treated as a cure for everything or as a holy grail of new service development. Customers should be treated as essential for the purposes of developing a new service, but their input concerns the incremental development of a service, not a radical designing project.

3.3.4. Designing a service delivery system

A key challenge for new service developers is to match the nature of service delivery system to needs and preferences of customers (Lovelock 1992, p. 24). This means finding the right inputs, e.g. people, technology, processes, equipment and creating a system that transforms these into outputs, e.g. service outcomes and experiences (Goldstein et al. 2002, p. 126). Service delivery relates to the processes, activities and resources needed to deliver a service, i.e. to facilitate the pre-requisites for value creation. Thus a service delivery system is the organizational structure of the organization itself that is required to produce a service (den Hertog 2010, p. 495). The organizational structure is then responsible with where, when and how the service is delivered to the customer (Lovelock 1992, p. 23). As an idea, this is relatively straightforward, but issues arise when knowledge is the primary resource within the delivery system. Figure 12 illustrates the service delivery system in relation to the whole service organization.

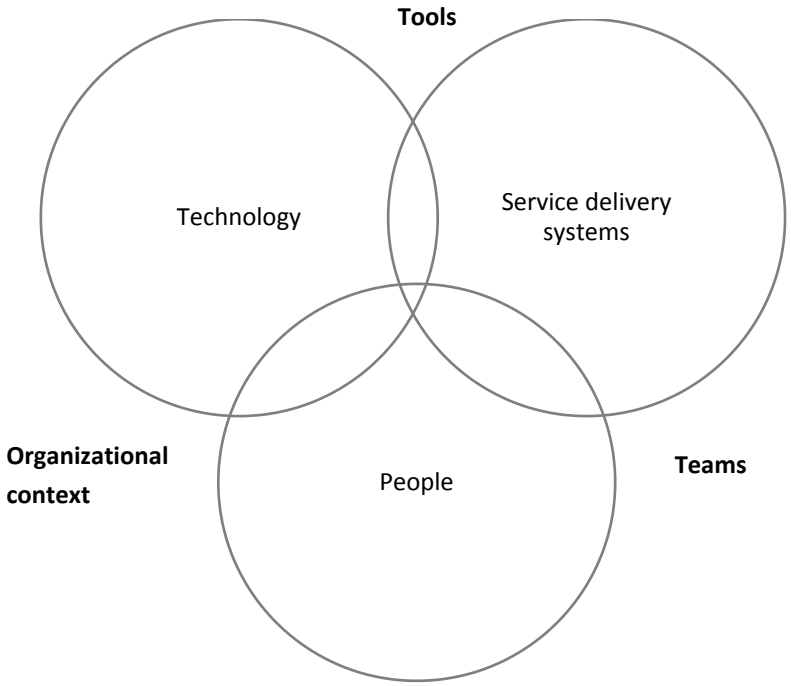

Figure 12: Service delivery in the service context (adapted from Johnson et al. 2000, p. 18).

Looking at figure 12, service delivery is fundamentally about linking people, technology, teams and tools together in an organizational context. However, consider knowledge as the fundamental service resource; it is not tangible, it is mainly stored in individuals and social processes, but the organization should be able to create an organizational structure (i.e. delivery system) that forms services out of it. Since professionals actually are the service, service delivery is more about managing this workforce than any "system" as such (Johnston & Clark 2008, p. 339). Despite this, service delivery should be standardized to the appropriate level, given that there would be room for knowledge workers (i.e. professionals of knowledge-intensive firms) to create and perform their day-to-day activities without an overkill of processes and service delivery procedures (de Jong et al. 2003, p. 853).

This so-called systems and regulations barrier (see Grönroos 2011, p. 467) makes good services impossible to deliver by the overkill of internal rules and regulations. Therefore, service delivery system design is in fact the design of an organizational climate and generalized processes that enable professionals and knowledge workers of all kinds to deliver services with consistent quality, having a sound balance of both innovative behavior and discipline (see Davenport 2010, p. 34 for process management of knowledge work in general). It might not then be reasonable to blueprint a service to its fullest extent (see Shostack 1984, p. 138 for an example), but to point out the key milestones that will enable quality control but leave room for individual practice.

3.3.5. Commercialization and value delivery

Competitiveness in new service development lies in the successful creation and commercialization of services that meet the users' needs and wants (Magnusson et al. 2003, p. 111). Whereas the creation of services was already addressed, commercialization should be the next point of interest. In brief, the role for a commercialization activity is to communicate realistic expectations of the firm's ability to create and deliver value to customers (O'Cass & Sok 2012, p. 10).

For a knowledge-intensive business service, the notion of realistic expectations is important. Patterson et al. (1997, p. 15) point out that the perception of realistic expectations in business-to-business markets is based on a perception of fairness. This means that both parties have a reasonable level of outcome versus input. This notion is especially important in a knowledge-intensive organization, because the customers are often unable to judge the quality of the service delivered (Silvestro et al. 1999, p. 402; von Nordenflycht 2010, p. 161).

Therefore the knowledge-intensive business service organization is responsible for delivering value at a fair expense, promoting its own service offering in a way that creates realistic expectations on the customer side. This means being ethical in ways of communicating the offering. Thus, since delivering value is based on the fact that customers perceive value according to their personal judgment of what they get and what they give, this judgment should not be misguided, even though it might be possible to do so (O'Cass & Sok 2012, p. 3). At this point, the concept of value deserves more attention.

> *"The value of a service has little to do with what the provider of the service thinks its value to be"* (Gordon et al. 1993, p. 129).

Meeting the users' needs and wants is not as straightforward with services as it is with products because in a service context the customers are more than merely consumers, as they contribute to the creation of new services (Lundkvist & Yaklef 2004, p. 255). This *co-creation* of value is widely addressed in service management and marketing literature (e.g. Vargo et al. 2008, p. 148; Tronvoll et al. 2011, p. 561; Grönroos & Ravald 2011, p. 9; Grönroos 2011). However, the concept of value co-creation is something that should be analyzed more carefully.

First of all, Grönroos (2011, pp. 288-289) points out that co-creation makes academics and practitioners underestimate, or perhaps even neglect, the fundamental role of customers in their creation of *value-in-use* that leads to the misjudgment of the organization's role in customers' value creation, and contradicts the very nature of value-in-use. However, it should be noted that a customer is the only actor in economic exchange who can *define the value of a service* (Vargo & Lusch 2008, p. 7), suggesting that customers do have an important role in the value process, but they do not facilitate

value as such. Grönroos (2011, p. 290) continues that value facilitation is not value creation or value co-creation, it is only part of the total process that leads to value for customers. Hence, the term co-creation should not be used (or should be used cautiously) as the *customer creates value*, and the firm *facilitates value creation*. There is no actual co-creation involved when discussing *value itself*. Figure 13 illustrates the difference between the provider's value facilitation and customer's value creation.

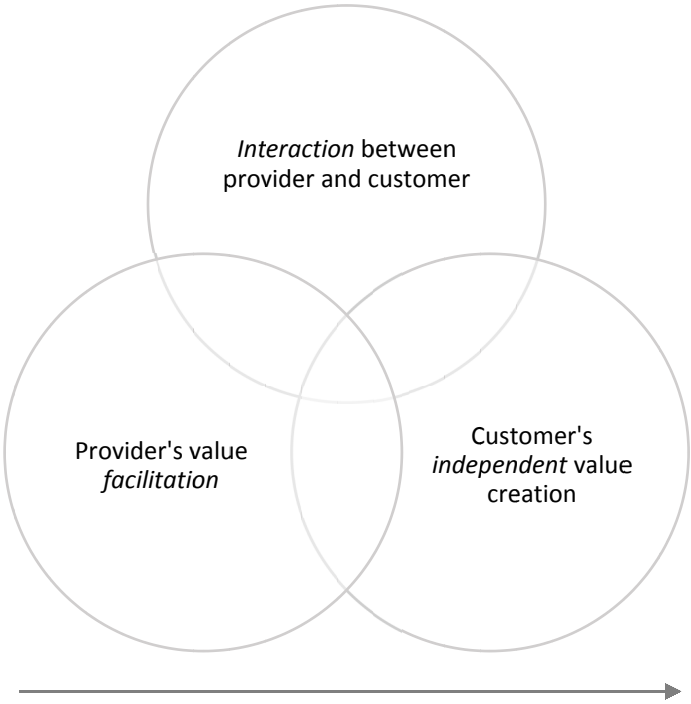

Figure 13: Value-in-use – provider and customer perspectives (adapted from Grönroos 2011, p. 291).

Figure 13 raises three aspects that are worth mentioning. First, a provider facilitates value creation, i.e. produces the pre-requisites for the service (Njissen et al. 2006, p. 242; Edvardsson 1997, p. 35). Second, customers define the value of a service, but most of the actual value comes from the independent value creation of a customer (Grönroos 2011, p. 290). Third, only the interaction of the provider and customer can be seen as co-creation, which is usually only a portion of the whole value delivered with the help of a service (Grönroos & Ravald 2010, p. 15).

During the past two decades marketing and management literature has focused on the issues of this value creation and locus of value for customers (Grönroos & Ravald 2010, p. 7). However, the value dimensions of a customer are not as simple as one might see in products. The value dimensions of a customer of any knowledge-intensive business service are not limited to monetary values, but also on the outputs, outcomes, impacts, risk and functional quality of the service provided (Sole et al. 2009, p. 292). Furthermore, professional services should be fair in a way that the cost-benefit ratio is reasonable for both the customer and the provider (Patterson et al. 1997, p. 15). Thus customers appreciate more than the core performance attributes of a service has to offer

(Johne & Storey 1998, p. 186). For instance, the use of ICT in knowledge-intensive business services merely a facilitator of value, not the value itself (Davenport 1993, pp. 45-47). This is why services should not be looked as mere core services, but through the facilitating services, additional services and other activities or concepts that are used in the facilitation of value that can be perceived as valuable to the customer through interaction. In conclusion, the key aspects of value are:

1. Value is facilitated by the provider
2. Value is defined by the customer
3. Value cannot be completely co-created, but it can be partially realized through interaction and value-in-use
4. Customers realize value independently, not only through interaction
5. Value should be facilitated through the whole offering, not just the core service

In short, service providers should produce and facilitate pre-requisites for services that enable value-in-use for the customer both independently and through interaction.

Recall the role of commercialization: communicating realistic expectations of the firm's ability to create and deliver value (O'Cass & Sok 2012, p. 10). These expectations do not reside only on the value and how it is communicated, but also on the image of the company (Edvardsson 1997, p. 32). The notion of image is essential in this case, since knowledge-intensive firms are specifically suspect to it (Alvesson 2004, p. 95). It is not sufficient to rely on value added, competences and skills, if the firm has not managed the expectations of the service delivered.

> *"Managers should remember that a purchasing decision is determined by how customers perceive the organization"* (Lovelock 1992, p. 25).

A management consulting firm can be the best in the business when looked through knowledge-related measures or other competences, but it will lose the marketplace to competitors that can build up their image and hence create trust within the client organization even before any interaction has occurred. Thus knowledge-intensive business services should focus on the management of expectations when designing the commercialization and value delivery of a new service, specifically taking on the challenge of improving its image through innovative management activities (Alvesson 2004; O'Farrell & Moffat 1995, p. 120; Løwendahl 1997, pp. 33-34).

3.4. Managing new service development and innovation in knowledge-intensive firms

Managing a knowledge-intensive firm means managing knowledge assets (in relation to knowledge-based theories, see e.g. Kogut & Zander 1992, pp. 384-385; Nunes et al. 2005, p. 107), which in turn suggests that managing a knowledge-intensive firm is open to intellectual capital –based theories (Käpylä et al. 2011, p. 318). A number of theories

become then applicable, from which most are concerned with the identification and management of knowledge assets (see e.g. Choong 2008, pp. 629-632; Dumay 2009, p. 200; Fernandez et al. 2000, p. 82; Guthrie 2001, p. 30; Lönnqvist et al. 2005, pp. 16-23; Wiig 1997, p. 401). These methodologies have three main things in common, namely the division to human capital, relational capital and structural capital (Dumay 2009, p. 200, Kujansivu 2008, p. 430; Lönnqvist et al. 2005, p. 4). As most of these methodologies and models have seemed to be dauntingly difficult to put into practice, they should be treated with caution if attempted to use as managerial models (Dumay & Rooney 2011, p. 350). In this research, however, the division to different types of intellectual capital will be used as broad concepts that underlie the managerial problem space of knowledge-intensive firms, described in table 7.

Table 7: Managerial issues in managing knowledge-intensive firms, an intellectual capital –based classification (classification adapted from Käpylä et al. 2011).

Type of knowledge asset	Managerial issue	Source(s)
Human capital	High proportion of professionalized workforce	Miles 2008; Blackler 1995; Starbuck 1992; Ejler 2011
	'Ambiguity of everything'	Alvesson 2004
	Opaque quality	von Nordenflycht 2010; Edvardsson 1997; Clark 1995; O'Farrell & Moffat 1997
	Identity-driven management	Alvesson 2004; Blackler 1995
	Productivity of knowledge workers	Drucker 1999; Davenport 2010
Structural capital	Non-compliance of knowledge workers to normative processes	Davenport 2010; Alvesson 2004
	Importance of embedded knowledge	Starbuck 1992; Blackler 1995
	Novel work processes	Swart & Kinnie 2003; Davenport 2010
	Strategy as a umbrella concept	Alvesson 2004; Ejler et al. 2011
	Importance of encultured knowledge	Blackler 1995; Ejler et al. 2011
Relational capital	Customer-intensiveness	Strambach 1997; Toivonen 2004
	Customer involvement in innovation management	Hipp 1999; Ordanini & Parasuraman 2012
	Relative importance of identity and image in the marketplace	Alvesson 2004; Edvardsson 1997; Cooper & Edgett 1999
	Network-based innovation	Ordanini & Parasuraman 2012

Looking at table 7, even though the list is only descriptive, not exhaustive, there seems to be a number of managerial issues in knowledge-intensive firms that can be traced to innovation management and hence new service development (see Cooper & Edgett 1999, p. 19 for an additional listing). In general, the big problem seems to be the

balance of dimensions; structural capital (e.g. processes, strategies, culture), human capital (e.g. innovative knowledge workers), and relational capital (e.g. customers and networks). Companies should not focus on only one of these, since they are interconnected and may create harmful effects when managed partially, even though one might be persuaded to think that concentrating on one would lead to dimension-specific improvements (such as profitability from process improvements).

Going further into this type of dimension-specific thinking, Käpylä et al. (2011, p. 323) go on to argue that there are two types of knowledge-intensive businesses (or organizations in general). First, the companies pursuing growth tend to underline the importance of structural capital, promoting processes and managerial structures to control the growth. Second, companies that are mainly focused on relational and human capital are usually pursuing profitability, good customer relations and job satisfaction. (Käpylä et al. 2011, p. 323.) The division is sound in theory, but in practice, one has to think is it an either or question, or just a view of a certain manager on knowledge work done by his or her employees. Consider if managers see the knowledge workforce as doing complex work in collaborative groups, structure is hardly underlined. On the other hand, if the knowledge workforce is mainly doing routine work, structure can be the solution to profitability, and growth (see Davenport 2010, pp. 21-22 for additional insight on knowledge work types). Thus, there might not be two groups of companies, but there are different kinds of managerial issues related to managing different knowledge worker groups within a firm.

A good managerial practice, then, is to have a balance that takes on all of the dimensions in table 7 in relation to the knowledge work that is done, and does not look at a single dimension for a quick fix (as e.g. structure as a way of managing growth), but as a necessary step of improving both firm performance and individual knowledge worker performance. As noted by Davenport (2010, p. 34), **the ideal situation is when structure creates a climate in which innovation and discipline coexist** – and therefore that promotes all of the dimensions instead of looking at one for a quick fix. This is what innovation management in knowledge-intensive business services is about, or at least what is should be. Given that services "happen" (e.g. Martin & Horne 1992, p. 62; de Jong & Vermeulen 2003, p. 853; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Njissen et al. 2006, p. 241), the main problem seems to be that innovation exists, but no discipline coexists with it. Even if this non-disciplinary would still produce innovative new knowledge-intensive business service ideas, those competitors who master the art of discipline as well, will undoubtedly outperform the ones relying on intuition, flair and luck.

4. RESEARCH METHODS

4.1. Introduction to methods

This chapter will analyze the empirical part of this research, structured into two main subchapters, namely *interviews* and *action research*. As discussed earlier, the empirical section itself is also divided into these two parts, since the two methods are significantly different and respond to different research goals.

4.1.1. Focused interviews theory and practice

In this research, the goal for interviews was *finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business service.*

The chosen interview technique was the focused interview, which proposes that the interviewees have knowledge on a given situation or problem and that the interviewer has researched the topic beforehand and built an interview structure that steers the interview into the themes that require attention (Merton et al. 1956, pp. 3-4). Focused interviews are more free and flexible than semi-structured interviews, and have a more conversational approach to interviewing (Hopf 2004, p. 205). Given the research goal and research settings, this was the most applicable choice (see chapter 1.2.3 for details). Merton & Kendall (1946, p. 541) summarize the outline of focused interviews as follows;

1. persons interviewed are known to have been involved in a particular situation
2. the hypothetically significant elements, patterns and structure of this situation have been previously analyzed by the investigator
3. the investigator has fashioned an interview guide that steers the interview towards the main themes
4. the interview itself is focused on the subjective experiences of people exposed to the aforementioned situation

This research follows these four key points. The situation itself is new service development and the interviewees chosen are familiar and involved with it, the hypothetically significant elements, patterns and structure have been presented in the theoretical background of this research and the interview guide is in appendices A1 (Finnish) and A2 (English). The fourth point is achieved by conducting the interviews appropriately, by giving the interviewees an opportunity to invoke points of view that

have not been anticipated, and being more open to associative reactions of the interviewees (Hopf 2004, p. 205).

Focused interviews, in a practical sense, are conducted like semi-structured interviews, but which promote the feel of non-structured, conversational approaches. In this light, the interview guide is less normative, only having a few key subjects that are opened to discussion and then steered by the associative reactions of the interviewees. Hence, no specific list of questions is used, but a clear view on what needs to be discussed is fashioned in order to gain insight on the particular situation that is of interest for the research.

4.1.2. Action research theory and practice

Gummesson (2000, p. 208) argues that action research is practically relevant in the specific case that is given and that the research is tested and modified trough action. Furthermore, action research ensures that the theoretical basis is in fact practically relevant, which is essential for both practice and academia (Myers 2009, p. 62; Järvinen 2007, p. 39; Payne & Payne 2004, p. 9). Action research will provide answers and implications related to the first research goal, which was *understanding new service development through the eyes of a knowledge-intensive business organization.*

Action research was chosen since the researcher works within the organization, takes action and participates with the day-to-day activities and constantly modifies and tests the theoretical background within practical settings (see chapters 1.2.2. and 1.2.3 for details). It has a problematic history since it is not a single academic discipline but an approach that has evolved through time, from the concept of action anthropology (Brydon-Miller et al. 2003, p. 11). Reason & Bradbury (2001) define it rather well:

"[Action research] is a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview which we believe is emerging at this historical moment. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities." (Reason & Bradbury 2001, p. 1).

This applies well within this research. Action research is participatory and ultimately concerned with mixing theory and practice to practical solutions in a real-world environment. In short, action research draws from the power of pragmatism that is only achieved by doing (Brydon-Miller 2003, p. 14). Thereby, action research is participating in and doing the things that also constitute as the research context. It does not take out social structures of individuals but embraces these as parts of the puzzle. It is a cyclic process that revolves around action and reflection, complemented by planning and

observing, but that should be looked as rigid, but that guides action research in its general sense (Kemmis & McTaggart 2000, p. 564). Figure 14 illustrates this cycle.

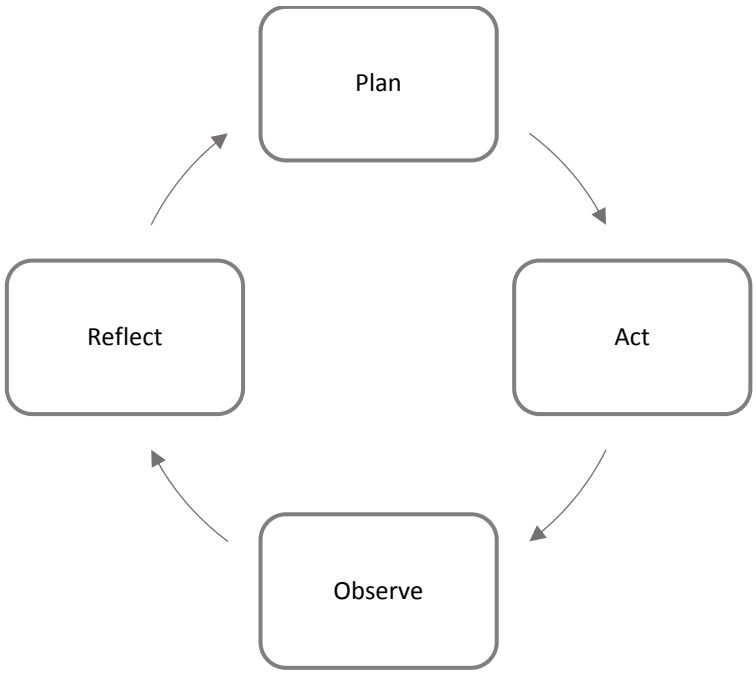

Figure 14: Action research process (adapted from Kemmis & McTaggart 2000, p. 564).

Action research is in this research guided by the process illustrated in figure 14. Every small phase always starts with planning, continued by acting on it and then observing what has happened and reflecting on it from an objective viewpoint. This is adapted to every workshop, meeting, scheduled conversation and other events that constitute as parts of the action research process. The reflection phase also withholds a brief summarization, where the reflections are written down for further analysis.

4.2. Conducting interviews

As suggested earlier, innovation and new service development are relatively broad concepts that are difficult to study from a single viewpoint or within narrow settings. This research was pointed at knowledge-intensive business services since they are in the core of academic interest because of their importance in our economy (see e.g. Gallouj 2002, Toivonen 2004, Howells 2000, Valls-Pasola & Amores-Bravo 2012). Furthermore, the research scope was narrowed down by selecting so-called *neo-professional service firms* and *technology developers* using the categorization from von Nordenflycht (2010). From these organizations, managers, senior consultants and directors with relations to new service development and the management of innovation were chosen since it is essential that the interviewees have sufficient knowledge or experience in relation to the selected themes (Tuomi & Sarajärvi 2009, p. 85).

The total of organizations that participated in this research was 8. All of the organizations were identified as knowledge-intensive according to the categorizations and definitions presented in chapter 2.3. From these organizations, a total of 12 interviewees were chosen, based on their knowledge and expertise on new service development and innovation. Table 8 presents the interviewees and organizations, providing insight on the research sample.

Table 8: Interviewees and organizations.

ORGANIZATION	SIZE (APPROX.)	DESCRIPTION	INTERVIEWEE(S)
Finnish Consulting Group	750 employees	A multi-expertise consulting company	Chief Executive Officer
Fountain Park	20 employees	A management consulting company specialized in crowdsourcing and co-creation	Service Portfolio Director
Global Intelligence Alliance	130 employees	A management consulting company specialized in market intelligence	Vice President
			Senior Manager
Rongo	60 employees	An information management company specialized in business intelligence and corporate performance management	Principal Consultant
			Senior Consultant
SWOT Consulting	12 employees	A management consulting company specialized in the manufacturing industry	Consultant Director
VTT Ventures	5 employees	A consulting investment company specialized in creating new businesses	Chief Executive Officer
Solteq	300 employees	A software service company specialized in information systems in retail and trade	Director, Continuous Services
			Chief Technology Officer
Affecto	1100 employees	An information management company specialized in enterprise information management	Chief Technology Officer

Table 8 does not take into account the differences in knowledge-intensity. However, regarding the analysis on different types of knowledge-intensive firms, a categorization can be made by the **degree of technological insight** required (in relation to *T-KIBS* and

technology developers as opposed to *neo-PSFs*[5]), since this research only looks into these two categories of knowledge-intensive business services. Furthermore, it should be noted that the size of the organization may affect the results since managing a large, multinational firm may be significantly different from managing a small, privately owned firm, despite the fact that they are knowledge-intensive. With these in mind, figure 15 illustrates the relative position of each firm in respect to these two variables.

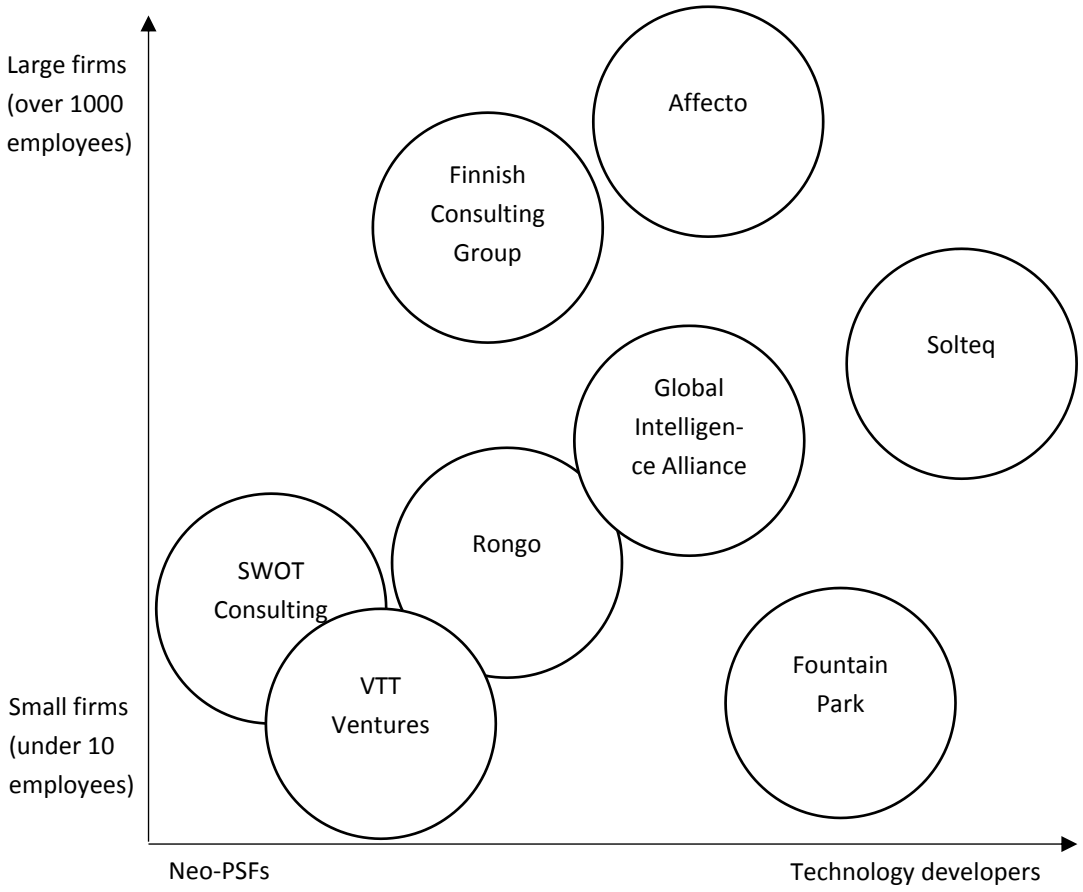

Figure 15: Interview organizations in relation to the classifications used.

As seen in figure 15, the organizations interviewed are different in respect to their size and classification used. It is important to distinquish the pure technology developers from the neo-professional firms, since they might be very different when looked from a managerial perspective. In addition, firm size is also a significant factor when it comes to managerial practices. These variables will be used when analyzing the results of the interviewees.

[5] See chapter 2.3, and the research from Toivonen (2004) and von Nordenflycht (2010) for categorizations used here.

4.2.1. Execution of the interviews

The interviews were carried out in private conversations within the companies' facilities during October 2012. The time spent varied from 45 minutes to 60 minutes, with an average of 52 minutes. Within this time, the interviewees were able to respond to the key themes without having to leave out important topics. The interviewees were notified of the themes and objectives of this research beforehand, in order to prepare the participants for the interviews.

Interview language was Finnish since all of the interviewees were native Finnish speakers. Thus the structure of the research questions and themes was done both in Finnish (see appendix A1) and English (see appendix A2). As for the data (i.e. transcribed interviews), the transcription was done for the main points, not word-to-word, in Finnish and then transcribed to English. Hence it should be understood that the inferences and especially quotes presented in chapter 5 are translated, so they may have slight variation from the original statements since some wordings and figures of speech do not directly translate from Finnish to English. Despite this, the translation was done in a way that does not affect the meaning and intent of the statements so the same inferences and conclusions could be made even if no translation between languages was done.

4.2.2. Data analysis

"We can compare qualitative data analysis with climbing a mountain to see the view."
(Dey 1993, p. 54)

The aim for data analysis is to make sense of the data, becoming immersed in it (Elo & Kyngäs 2007, p. 109). This sense-making is done via data-analysis, which is a circular process involving three phases, namely *description, classification* and *combination* (Dey 1993, p. 32). Each of these phases was carried out in an iterative fashion, not as a single process. By doing so, the interviewer became more familiar with the data and could make valid inferences from it. The process was based on a premise that the interview data (i.e. words) can be classified and reduced to categories without compromising the meaning or connotation of them (Westbrook 1994, p. 245).

The data analysis phase included a variety of activities. The main steps were working with the data and discovering what is important, organizing the data and breaking it into manageable units, synthesizing and searching for patterns and inferences (Bogdan & Biklen 1982, p. 145). These are in line with the aforementioned three phases of data analysis (Dey 1993, pp. 31-32) and with the qualitative data processing framework from Saunders et al. (2009, p. 490), including summarizing data and categorizing data as key concepts. This process is summarized by Ghauri & Grønhaug (2005, p. 206), introducing a set of three activities, namely data reduction, data display and conclusion drawing. All of the steps and phases in the analysis phase were conducted in a cyclical

manner, continuously analyzing the data and taking into account everything that has been learned so far.

In this research, data analysis of the interviews was focused on the key themes and objectives outlined by the second research goal and the main research question. Given the background presented in Chapter 1.1, data analysis and its phases were concerned with the following topics related to new service development:

- Idea generation and acquisition
- Commercialization
- Strategic management
- Customer involvement
- Service delivery systems and processes

The data was structured within these categories, providing a sound basis for analysis. Furthermore, patterns and dynamics between these categories were identified and analyzed in order that the managerial perspective in new service development could be assessed. Figure 16 illustrates this process.

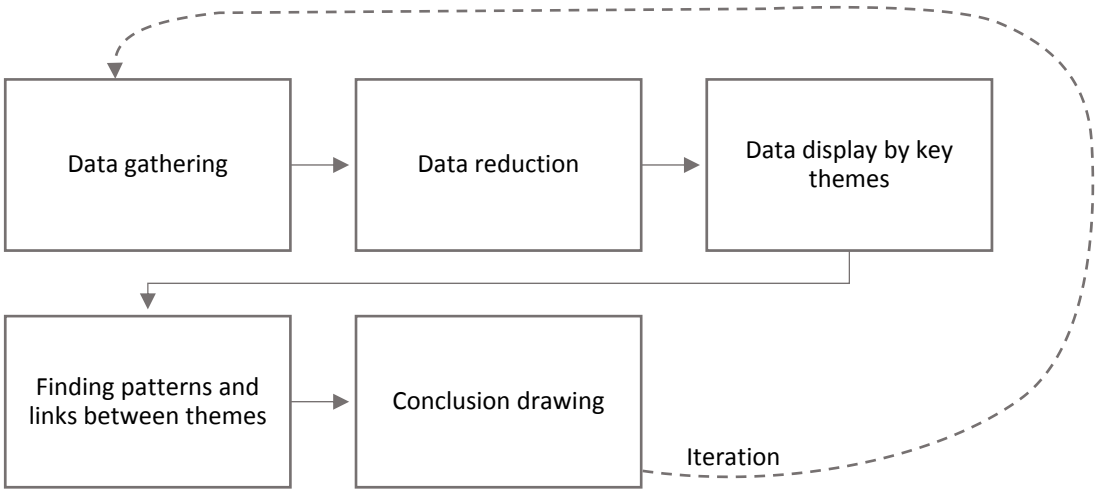

Figure 16: Analysis of qualitative data.

As seen in figure 16, conclusion drawing lead to iterations and started the process again from the data gathering activity. In practice, each iteration was made when an interview was transcribed and when all interviews were processed, the analysis was done for the whole dataset until a saturation point was confronted (i.e. no new conclusions or inferences could be made).

4.3. Conducting action research

Conducting action research was a process that lasted for a total of 5 months during July 2012 to December 2012. During this time, Data Rangers Oy was able to develop a

portfolio of new services with the help of the researcher. The process itself was highly iterative and the theories and knowledge on the matter were constantly tested in practice. However, four main phases could be pointed out, namely s*trategic planning*, *search for concepts*, *concept development*, and *full launch*.

The role of the researcher in each phase varied, but maintained significant throughout the process. As such, each phase had similar activities that were used to manage and control the phase itself. In most cases, the actual tasks and activities were workshops, formal meetings, telephone meetings, videoconferences and the daily interaction with e-mails and face-to-face conversations. These varied in terms of time, people involved, and outputs required. From each activity, a set of key points were written down and when seen as useful, shared with the service development team. This new service development team was the steering committee of the new service development project and all of its phases, usually contributing to each activity in every way possible. The team consisted of five employees, the CEO, principal consultant, senior consultant, sales manager and business development consultant (i.e. the researcher).

The team was responsible for conducting the aforementioned new service development process during fall 2012. Within this time, customers were consulted and the ideas were tested in real-life environments, but customers were not present in the development activities as such. Instead, customers were used as a "testing environment" where ideas and rough concepts were analyzed from the eyes of the beneficiary. To gain an understanding on the activities, actor roles and resources in each phase, table 9 presents the key tasks and events in each phase in a chronological order.

Table 9: Action research phases and activities.

PHASE	ACTIVITY	TASKS	METHODS
Strategic planning	Promoting a new service-oriented view on competition	Changing the culture towards services – creating an understanding within the company that the future is service-driven	Formal meetings, conversations, e-mails, informal company events
	Creating a broad service strategy	Looking through competition and customers and finding a niche that could be a source of competitive advantage.	Formal meetings, workshops, conversations
	Agreeing on a scope for concept search	Aligning the new strategy and the search scope, thus creating boundaries of innovation.	Workshops, formal meetings, conversations
Search for concepts	Promoting ideas	Idea workshop, conducted with the KJ-method	Workshop
	Idea refinement and analysis	Analyzing ideas within the company and with selected customers	Formal meetings with customers and the whole company
	Competitive analysis	Analyzing the competition for each given idea	Analysis workshop
Concept development	Looking for concept development methods	Searching for a rapid, iterative way of conducting concept development	Conversations, daily e-mail conversations
	Hypothesis driven development	Conducting concept development with the chosen method	Customer participation in concept evaluation, daily conversations, analysis workshops
	Friendly piloting	Conducting first pilots with known, familiar customers	Pilot service deliveries, analysis workshops, conversations
	Iteration	After analyzing results, iterating back to hypothesis driven development	Analysis workshops
Full launch	Formal pilots	Conducting first pilot with new customer	Pilot service delivery, analysis workshop after delivery
	Market launch	Going public with new service portfolio	Formal meeting

As seen in table 9, the activities and tasks varied within each phase. Some included customer participation and some were more informal than others. However, most activities are indeed conversations and meetings and thus the social interaction between clients, and especially within the service development team. All of these activities and their outputs, as well as all of the notes written down are parts of the dataset used in this research. None of the meetings and conversations was transcribed word-to-word, but a summary of notes and key insights was done whenever possible. In addition, most of the key points were shared within the company through documents and e-mails, so the dataset itself is relatively large. This caused some problems for data analysis that required a different approach than in the interview phase.

The aim for data analysis in action research is the same as in interviews that is to make sense of the data, and ultimately becoming immersed in it (Elo & Kyngäs 2007, p. 109). Similarly, the phases of *description, classification* and *combination* (Dey 1993, p. 32) are also used, but they appear on a specific part of the action research process. Whereas data analysis for interviews simply follows these steps, action research starts with a framework of ideas and methodology (i.e. theoretical background), uses these in the area of application and then, based on observations and reflection, analyzes the data (e.g. written notes, observations, critical reflections) in the same fashion as in any qualitative data analysis process (see e.g. Checkland 1991; Merton & Kendall 1964 for action research methodology). Most notably, data analysis in action research is done in the reflection and observation phases, where the data is collected and then analyzed in the same fashion as in qualitative research in general.

The data analysis theory for qualitative research was already described in chapter 4.2.2 (see e.g. Bogdan & Biklen 1982; Dey 1993; Ghauri & Grønhaug 2005 for original theories used in this research), and the same methodology is used here. The difference is that the raw data is not transcribed interviews that are structured to some extent, but mainly notes, e-mails, brief analyses and other written material done by the new service development team and the researcher during the project at the company. This does not change the fact that qualitative data analysis can be carried out as it was done in the interview-phase, but synthesizing and searching for valid patterns and inferences was undoubtedly more difficult since the material was more scattered and non-structured. Nevertheless, valid conclusions and findings could be made, when the material was analyzed from an objective view, and within a particular context (e.g. event, conversation or workshop).

5. RESULTS – PART I: INTERVIEWS

5.1. New service development in general

Recall RG2: finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business services. This chapter will provide insight on the second research goal, researching knowledge-intensive business service firms within new service development and innovation management. The goal is to understand how such firms manage their innovative capabilities and how they design and develop new services. The chapter is structured with the interview themes in mind (see appendix A2).

"Those who want to succeed, need to change themselves in some way." (Consultant Director, SWOT Consulting)

Most of the interviewees argued that in order to stay competitive, they need to constantly design and develop their portfolio. This development was usually perceived as evolutionary rather than revolutionary as inventing radical new services is something that was seen to be less common for knowledge-intensive firms. The responses did not vary in terms of firm size or type[6]. Despite this, new services were indeed developed and the current services were constantly refined with the changing competitive environment and customers in mind.

The key challenge of new service development was argued to be that there is no systematic process that is used, for firms of all types and sizes. Some felt that this was a relatively good thing, since process-oriented management usually hinders innovativeness and knowledge workers are reluctant to follow normative ways or working. However, it was understood that a generalized process would have a major impact in efficiency and it would significantly improve the management of new service development. As one of the interviewees in a larger firm summarized it:

"It would be a major benefit if we could manage the innovation process and the innovative people here more carefully and systematically. Now it's a bit chaotic, and even though we get good innovations as such, there are some unnecessary so-called innovations that do not align with our business goals." (Director, Continuous Services, Solteq)

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[6] In this chapter, the interviews are analyzed in terms of firm type and size. Type refers to a firm being classified as a technology developer or a neo-PSF, or a combination of these. See chapter 4.2 for details.

Given that new service development was considered as a way of achieving competitive advantage and that a **generalized process of designing new services should be used**, one might be persuaded to think that any product development or new service development process would work. According to the interviews, such normative processes would be too rigid and too slow for the purposes of designing knowledge-intensive business services, so a completely new process should be used – one that takes into account the knowledge-intensive context and the fact that the process should revolve around services, not products, since product development was seen as much different from service development. One of the larger, more technologically based firms already had such a generalized process in place, but it was clearly driven by technology (i.e. product-based innovation) instead of services. Most firms did not have any systematic process in use, but were keen on investigating the possibilities of such an approach to innovation management.

The next chapters will give more insight on the aspects mentioned here. First, the analysis of managerial issues confronted by the companies is assessed. Second, the new service development process and its activities are studied in detail. Third, a summary of the key findings and managerial implications are presented to conclude the first part of the empirical research.

5.2. Managerial issues in new service development in a knowledge-intensive business service organization

"This is not a car assembly line, so that does create challenges for management."
(Chief Executive Officer, Finnish Consulting Group)

It was commonly understood that new service development is much different from traditional product development, both from a process-oriented view and from a managerial perspective. First and foremost, the interviewees perceived knowledge work and knowledge workers to be relatively autonomous when delivering and designing new services, some even argued that the employees tend to innovative on their own, without any managerial guidance or top-level support. Some of the larger firms saw this as a nuisance in addition to being an opportunity, whereas smaller firms regarded employee-driven innovation to be more of a source of competitive advantage.

In general, the concept of **"self-actualized innovation"** is seen as both a negative and positive issue from the management side. Some interviewees perceived self-controlled innovation as a ways of creating successful new services that deliver value to customers, whereas others, usually larger firms, regarded it as a non-preferable activity. However, the autonomous innovative work done by certain individuals was mostly seen as an asset to the company, if it could be managed in a way that does not hinder with the strategic intent of the company, or with the individual goals set to such employees. As stated by one of the interviewees:

”There are some boundaries that limit what you can actually do, but when you manage to stay within these boundaries, you can innovative as much as you want.” (Principal Consultant, Rongo)

The interviewees saw innovation as a constant activity, done both by the self-actualized, innovative employees and in an organizational level, i.e. conducted by management. Larger firms did not have different processes as such, but the responsibility for innovating was added to business line managers, so it can be argued that larger firms have a tendency to “managerialize” innovation, or at least to assign innovation management to their managers’ responsibilities.

Most of the interviewees have a somewhat systematic process for conducting innovation, but the process was usually stated as merely having meetings on a quarterly basis in all types of firms. These meetings were seen as ways of refining the portfolio, gathering ideas and improving current services. None of the interviewees stated that new services were systematically innovated or launched. The key word here is systematic, as new services were certainly designed and developed, but the interviewees felt that this was done mostly by single employees, not as a result of a management activity. Management was mostly seen to be responsible for the continuous refinement and development of current services, not for any radical innovation as such, even though the larger companies had managers who were responsible for innovation management. This is not to say that innovation is not managed properly, but that new service development is not conducted by a systematic process. One of the interviewees summarized it:

“We listen to employees and look for trends outside of the company in a systematic manner. Nothing comes by chance, but we cannot state that we actually control the process of innovation.” (Vice President, Global Intelligence Alliance)

The process of designing and developing new services was always seen to have some key elements, despite that there is no systematic process as such. All firms of types and sizes agreed on three key issues. First and foremost, new services and the development of current portfolios was considered to be **always steered by strategic management and strategic planning**, perhaps not as a activity in the process itself, but as a ways of steering the business and the efforts of innovative employees. Second, in order to create successful new services, the interviewees were unanimous that the **service should be commercialized to the right extent** in order to enable effective marketing and conceptualization of the service concept. Third, when creating or designing anything new, the interviewees stated that one key problem that management encounters is the **standardization-customization paradox** that is providing a new service that is perceived custom and tailored by the customer, and relatively standard in the ways of delivering it within the company. The next chapters will assess these managerial issues in depth.

5.2.1. Strategic management and the importance of corporate identity

"Strategic planning steers and it must steer the development of new services." (Chief Executive Officer, Finnish Consulting Group)

The interviewees argued that strategy should always guide new service development and innovation. The point here was made that if strategy is absent, **service innovation and service delivery will result in chaos and it would be impossible to manage growth without a clear idea of how to conduct business**. Here the interviewees all agreed, but some variation was seen in the light of firm size, where larger firms underlined strategic management more than the smaller firms. Furthermore, strategy was perceived to be an umbrella concept that is something that implicitly drives the conduct and efforts of employees. This type of strategic thinking was common for all firms in the interviews. As stated by one of the interviewees:

"Strategy is not a normative set of rules, but it does guide the innovative work done by employees. This helps to steer the ship, people are not goofing around with unnecessary things. When you stick with strategy, you can be as innovative as you like." (Principal Consultant, Rongo)

Herewith the concept of **identity** is pointed out. The interviewees agreed that it is not possible to manage knowledge workers and hence the new services with industrialized processes, but mainly with strategy and with a common understanding on what the company is doing and where it is headed. Furthermore, the interviewees felt that even though strategy did outline the efforts and activities and form a set of boundaries on what should be done, the concept of strategy is relatively different from what is perceived as strategy in a e.g. manufacturing company. The main problem with strategy was perceived to be the expert-based workforce that tends to innovate whatever and whenever appropriate. All firms agreed that this created a managerial problem that is how to create strategic alignment with new service development in a way that does not hinder innovative behavior but controls it so that innovation is not targeted to non-important issues. Figure 17 illustrates this managerial issue.

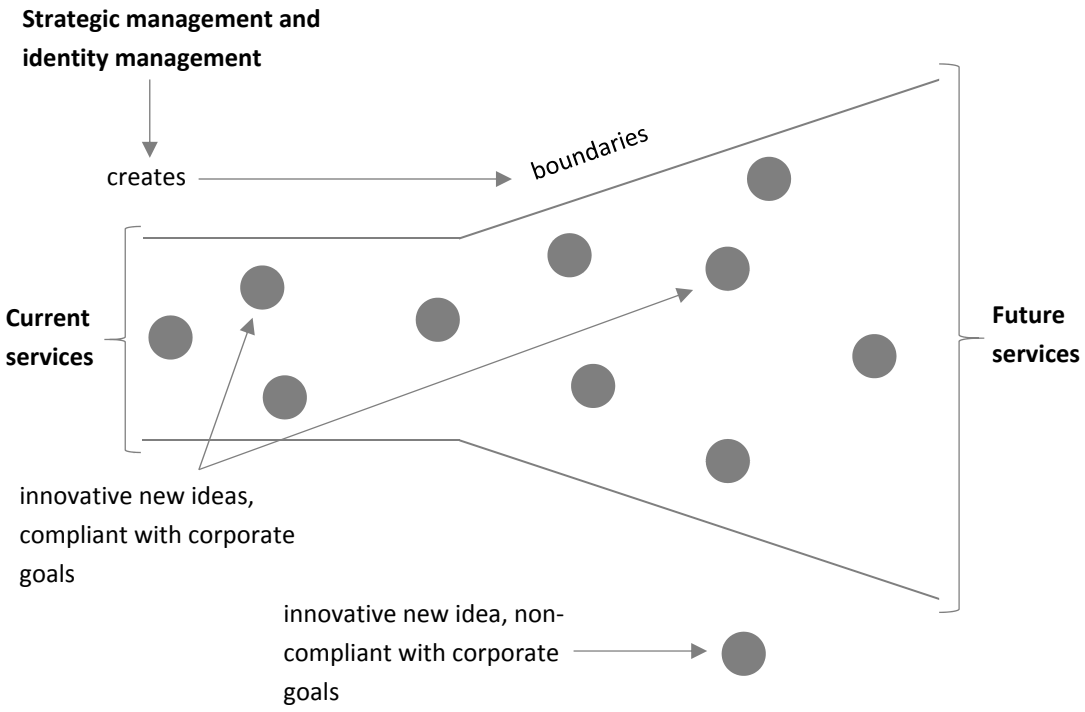

Figure 17: Strategic management as management of innovation boundaries.

Most interviewees looked at **strategy as a ways of managing the areas of innovation** instead of the innovative behavior of individual employees. It was perceived that strategy works best when it controls the bigger picture, focused on what one of interviewees labeled as "service-baskets". This means that strategy itself may guide the company towards innovation in a relatively upcoming or trendy service area, such as predictive analytics within a broader set of information management services. By doing so, the interviewees stated that innovation and new service development can be unleashed and uncontrolled, as long as it is within a context that is perceived to be important for the company's future. This is in line with the idea of corporate identity, as the interviewees argued that employees do innovate within the right boundaries since they feel that they belong in the company and believe in its strategy and vision.

Finally, the interviewees perceived innovation and new service development to be a key asset in strategic management since it offers competitive advantage and creates new business. Larger firms were more managerially oriented, suggesting that innovation and new service development was a managerial responsibility, whereas smaller firms had more room for employee innovation. It was understood that strategic management will play a key role when controlling this development of new services, but **it should not take too much of a role but to inherently guide the efforts of innovative employees**.

5.2.2. The standardization-customization paradox

"Standardization may go too far, resulting in decreased innovative capability. Then again, standardization to the right extent promotes productivity, efficiency and customer-perceived quality." (Chief Executive Officer, Finnish Consulting Group)

Moving on from strategic management to be managerial perspective in new service development, the main problem that the interviewees stated was the standardization-customization paradox. Many larger firms were more standardization-oriented, but all firms of types and sizes agreed that standardization is essential for efficiency and productivity. In short, the problem proposed by the interviewees was that customers appreciate tailored services that have a unique feel to them, but as far as management is concerned, the service delivery process should be standardized in order to provide quality and delivery performance. At the same time, an overkill of formalized processes was seen to result in hindered innovative capability, so there was a need to find the right balance. Not surprisingly, technologically oriented firms were more standardized in their technology development areas, but were having the same issues as the neo-PSFs in their professional services. Hence, it can be argued that all managers of all firms that were responsible for *services* had the same problem. As stated by one of the interviewees:

"It's poisonous to bring out too many processes for knowledge workers. However, it is impossible to manage service delivery without a standardized set of procedures. We need to look for that common ground that allows space for creative thinking and innovation, but that is underlined by generalized processes." (Service Portfolio Director, Fountain Park)

The main idea that the interviewees stated as a solution to the standardization-customization paradox was the service concept. They argued that a concept is a clear understanding on what is delivered and what the delivery should consist of, creating a ways of managing the efforts of knowledge workers but maintain a tailored experience to the customer. Furthermore, it was perceived that using concepts and internal processes do not only help to manage new services and current portfolios, but to give proof on quality in business-to-business sales. Concepts varied in different firms, as technologically oriented firms usually had technology-driven service concepts that were based on technological know-how, and professional service firms had concepts that were more marketing oriented. Despite this contradiction, concepts were seen as valuable tools for managers and practitioners.

As stated before, concepts were seen to work as tools for management and to provide clues of quality for customers. However, **service concepts were also seen as ways of capturing tacit knowledge** since such concepts work as ways of transforming the expert knowledge of innovative employees that have created new services to

organizational knowledge in the form of information. Furthermore, the interviewees also argued that concepts worked as ways of managing knowledge in general, as new services needed to be explicitly conceptualized and usually explained to a wider audience. Herewith a conclusion can be made: **concepts were seen as a method of formalizing the intangible and providing a ways of managing expert knowledge and transforming it to an organizational level**. The interviewees stated concepts as essential through a number of ways:

"We have succeeded in duplicating knowledge, as it is matter of constant knowledge sharing through a set of concepts and best practices. We can multiply expert knowledge, in a way." (Principal Consultant, Rongo)

"A standardized concept helps to remove the individualization of expertise and we are in the process of decreasing the amount of this individualization even more." (Chief Executive Officer, Finnish Consulting Group)

"A concept does not need to be easy or straightforward, but without one it is difficult to run business." (Vice President, Global Intelligence Alliance)

"A standardized concept is good for management and for the company, as long as it does not hinder tailored customer experiences." (Consultant Director, SWOT Consulting)

Given that concepts are essential for managing new services, the focus now turns to the problem of building tailored customer experiences and value without losing the efficiency and productivity impacts given by a standardized process. The interviewees stated that tailored services and tailored experiences are what customers want from a knowledge-based service, since the need is always unique. It was commonly understood that customer requirements are not standard and that any service is always different from the other. Of course, the technology-driven companies usually had a certain technology that is not unique, but **services were used to tailor it to unique customer solutions**. However, the interviewees argued that finding the right level of standardization and thus finding the right concepts lies in experience, without question.

The interviewees stated that experience, as a phenomenon, is about finding the common ways of working that seem to build up concepts that customers see as valuable. The interviewees argued that concepts are a result of evolution, something that is done by delivering a certain new service to different customers and then finding the factors that seem to stay intact and pointing out the factors that need room for change. There was some division between interviewees in this respect, since some of the interviewees in neo-PSFs stated that there is few things in common with different service deliveries whereas technologically driven, larger companies saw that there is a lot that stays the same and that can be transformed to standard operating procedures and best practices. In general, the interviewees were unanimous that a service concept is done through

iteration, iterating from standardized to customized until the right concept is found. Figure 18 illustrates this standardization-customization paradox and the ways of finding the "right concept" as stated by the interviewees and interpreted by the researcher.

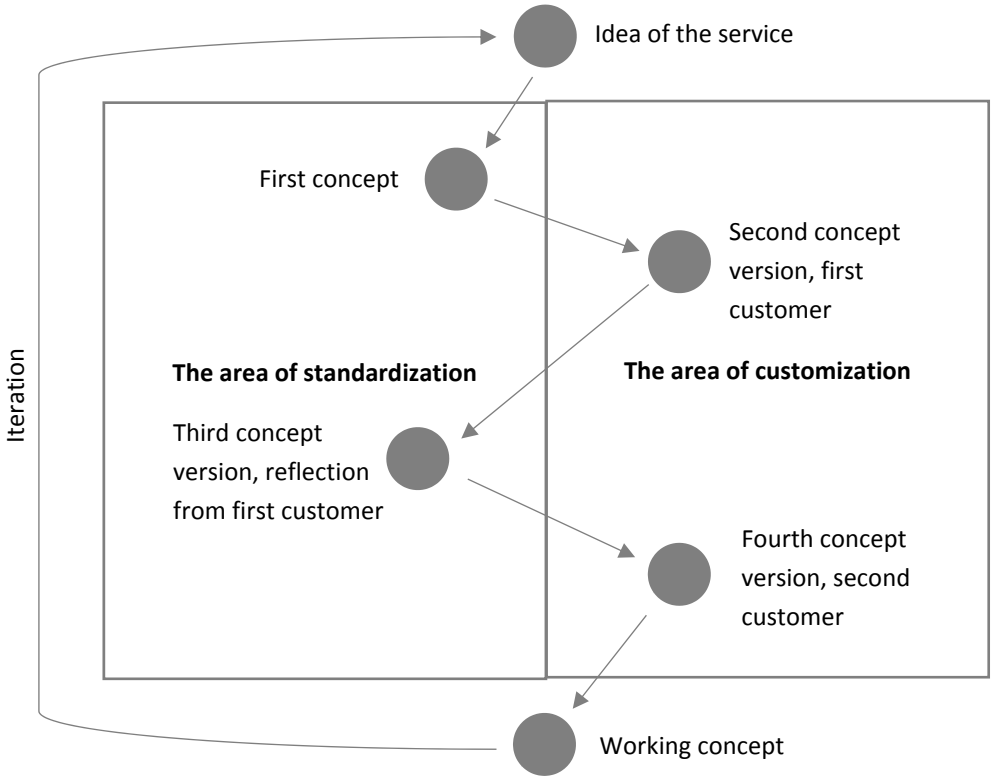

Figure 18: Standardization-customization -paradox and the service concept evolution.

The interviewees argued that the area of standardization is much related to the point of finding best practices, i.e. ways that seem to provide value for customers within a certain context. For new service developers, this means that innovation should always strive to locate such standardized ways of working, providing efficiency and maintaining customer-perceived customization. As an implication, **new service development should be based on trial and error**, so that ideas are systematically tested in order to find working concepts or practices. The interviewees suggested that a long service development process without iteration was too rigid and overwhelming for a knowledge-intensive firm. One of the larger companies did however have management practices that were somewhat bureaucratic and time consuming, but they also saw that a more rapid development process methodology would have its place.

The interviewees continued that finding these standard practices also promotes workforce productivity as long as there is no overkill of formalization. This was perceived as essential for management, in both smaller and larger companies. The interviewees also argued that concepts and standardized processes work well when they are not managed to an extent that hinders innovation (referring to the overkill-factor before). There was a consensus that **common procedures and best practices are required for new service development to be successful**, but the innovation itself,

taking the first step towards a new concept was seen as more of a work of art than science. As noted by one of the interviewees:

"Efficiency and being competitive in the long run does require standardization to the right level. But then again, innovative people tend to be quite artistic, and you have to leave them room to create." (Vice President, Global Intelligence Alliance)

All of the companies, both neo-PSFs and technology developers, did understand that knowledge workers need room to innovate and to create – suggesting that managerial practices should not be so normative that would decrease the innovative capability of the firm. However, as suggested before in the strategic management –chapter, the interviewees felt that innovation should be controlled and managed, not just left to chance.

5.3. New service development activities and processes

New service development in knowledge-intensive firms was perceived by the interviewees to be a **non-systemic** activity and that **innovation lies in the capabilities and self-actualization needs of their employees**. In addition, some interviewees stated that new services also form through the continuous analysis of markets, customers, trends, competitors and even academic literature. It was noted in many interviews that these so-called innovations are usually not new services as such, but incremental development ideas that customers see valuable or that help to steer the service within the company. As argued by one of the interviewees:

"Innovations reside in the self-actualization needs of innovative employees who are in contact with the customers." (Senior Consultant, Rongo)

One of the main success factors that were commonly stated by the interviewees was that **the employees who actually create new services should be the ones delivering it as well**. Both smaller and larger companies agreed that it is not reasonable that some people innovate and other deliver, as it is not financially sound or even helpful for new service development in general. For a knowledge-intensive firm, it was argued that it is common that people innovate and then actually conduct and manage the service as well. This was noted even in larger companies, even though one might be persuaded to think that only managers have the capabilities to create something valuable and new, and to manage it as well. Even the biggest companies interviewed said that innovations reside in the whole employee base, not just management itself. This could be perceived as unique behavior for knowledge-intensive firms, or at least those who have experts and professionals of all types as the main workforce.

Having the same people generating ideas and then putting them to practice gives flexibility and efficiency to the process, as there is no development unit as such that should be in charge of designing new services. Furthermore, it was understood that

using the same people to innovate and to produce the service, there will be more motivation to perform well and it will help to manage the gap between innovation and business goals as the people running businesses will be the ones who innovate and deliver as well. Considering new product development, this is actually the opposite of what is happening in a goods-based company where production and new product development may be separate functions.

Moving towards a methodological view, the interviewees were almost unanimous about the fact that **new services are best innovated through piloting with customers and testing the concepts in a real-world environment**. It was stated that new service development should be concerned with how can an idea of a concept be tested and created with a customer as quickly as possible and with as little bureaucratic processes as possible. Even larger, technologically driven knowledge-intensive firms agreed that knowledge workers need to rapidly develop their ideas and have the freedom to do so. Despite this, only one of the interviewees stated that they can manage of control this innovative behavior or the conceptualization of services through piloting. In a sense this underlines the fact that services do seem to happen. However, this "happening" is a result of clear intent and the need to succeed and fulfill customer needs and wants at least in most the interviewed firms, especially in neo-PSFs. Two of the interviewees summarized this well:

"When you do these kinds of pilots, we get a grasp on what can be done and what is the concept. And when this is iterated, the concept refines itself and becomes a practice that can be duplicated and scaled to match the need." (Principal Consultant, Rongo)

"What needs to be done is to test your service concept against the market in a way that requires minimal investment but what gives feedback from actual customers." (Chief Executive Officer, Finnish Consulting Group)

Any new service development activity was seen by interviewees as successful when it fits the market need and responds to requirements of customers. After all, a new service is relatively unimportant if it does not respond to the needs and wants of customers. There was no actual function that generates new services in the companies analyzed, but a somewhat systematic way of conducting meetings and projects that aim to develop service portfolios. Therefore new service development in knowledge-intensive firms is not something that merely happens, but is also not something that is managed with a process. However, **the interviewees clearly stated that a generalized process would be of importance for designing and developing new services**. Here the technologically driven, larger companies were ahead, having a more clear idea on what this generalized process is.

Most of the interviewees did state that there is always some ways of gathering and implementing ideas, usually done on a quarterly or monthly basis. There was a

consensus that idea generation and gathering is a constant activity that sometimes leads to new service development projects, but the acquisition of ideas was seen as a relatively informal activity and based on a variety of methods and spread across organizational levels and individuals. The managerial perspective on idea gathering and acquisition is analyzed next.

5.3.1. Ideas and how they arise

The interviewees argued that **social ties and networks are of utmost importance when acquiring ideas**. Especially the smaller companies looked at networks as main sources for ideas. Ideas were seen to develop in many contexts, ranging from customers and business partners to competitors, academic literature and even non-formal, non-business happenings and events that were not related to the business as such. Mostly the generation of ideas was seen to work within the firm, in its employees and their need to develop as individuals.

Some technologically driven companies did point out, that this individual development is not always sound, since some of their knowledge workers might not have significant customer interaction and thus could innovate something regarded as irrelevant for business. However, most companies agreed that the need for individual development is essential for ideas and that it is a good way to generate exceptional business. In addition, the interviewees stated that ideas as such were usually incremental and that the context of knowledge-intensive business services rarely offers the possibility of creating something that is completely new. As stated by one of the interviewees:

"Ideas do arise from within the firm, but of course they are unique as such. It would be quite extraordinary that someone would create a management consulting service that is perceived as unique." (Consultant Director, SWOT Consulting)

Another point that was agreed by most interviewees was that **radical ideas arise from competitors, business partners and literature, whereas incremental ideas reside in customer collaboration**. It was perceived that knowledge-intensive firms can learn from other knowledge-intensive firms but from different sectors and industries. For instance, one interviewee from a small, neo-PSF argued that it can be beneficial for a management consulting firm to look at law firms or other professional services firms for ideas. As an implication, ideas for knowledge-intensive business services should be looked from a variety of channels and contexts, not necessarily from the competitor next door. However, acquiring ideas from competitors was not uncommon. Larger companies, especially the technologically driven ones, saw imitation as a common nuisance, rather than something that provides innovative ideas. One interviewee in a larger company even argued that they had seen a methodology developed in the company to be used without alterations in another firm.

Given that ideas may be acquired and generated, the interviewees also stated that ideas for service concepts may be a result of evolution and the constant interaction with markets and customers. **It was perceived that knowledge-intensive firms are in a constant state of learning from within and outside of the firm, and due to low capital intensity, they can respond quickly to new challenges**. Unsurprisingly, this was underlined by neo-PSFs and seen as more problematic within the more technologically oriented firms, since services may be quicker to launch than larger, product-driven offerings. In general, the interviewees stated that the new service development process of going from ideas to full concepts should be rapid and flexible to changes. Moreover, it was stated that idea acquisition should be a constant activity that does not need to be managed as such, but what needs to be supported and that should be reinforced with a new service development process that would quickly adopt them into business.

5.3.2. Customers and customer involvement

"The simple fact that new services should respond to only one thing that is fulfilling the needs of customers tends to be forgotten, ironically just because of its simplicity."
(Chief Executive Officer, VTT Ventures)

Involving customers was a theme that split the interviewees into two groups. The first group had a traditional view that customer collaboration, involvement and co-creation is the key for new service development success, whereas others felt that new service development should not involve customers too closely to the business as they know less than the company does and may hinder the development of innovative new services. In general, neo-PSFs seemed to promote customer collaboration more than the technologically driven companies. Despite the contradiction in the level of involvement, it was commonly stated that **new service development should be associated with customers as early as possible, given that it does not slow down the process or create services that are too custom to be scaled up and standardized**.

All of the interviewees stated that there is an ongoing process of interaction with the customer, but at the same time there needs to be a line between interaction and an overkill of involvement. Involving customers too much was perceived by the interviewees to be complex and to take up a lot of resources, sometimes even at a state that results in decreased financial performance (due to excessive co-creation that is sometimes too friendly to be billable). This problem was summarized by most of interviewees as a need to **keep the situation as facilitator-beneficiary, not as creator-creator**, even though smaller neo-PSFs did argue that the creator-creator –based situation is sometimes the only way to deliver services.

Even though the role of the customer as a co-creator was seen as important by a few companies, most of the interviewees argued there is little room for standardization or

efficiency if the customer is not seen as customer by nature. This does not mean that customer involvement should be downgraded, but most the interviewees stated, that **new service development should involve customers to the extent that enables effective idea gathering and concept development, but not to the point where customers create the service from end-to-end**. However, there was a consensus that customers should always lead the way for the development of new services, since any other way was considered to be rather ineffective. As one of interviewees put it:

"We don't innovative with customers as we are ahead in terms of what can be done. However, the process of creating something new must be directed towards a customer need. Otherwise, what's the point?" (Principal Consultant, Rongo)

Most interviewees said that the best way to involve customers is piloting and prototyping the potential offering with them. Customers were seen as a ways of incrementally testing and developing the idea of service, resulting in a good understanding on the possible market fit. Furthermore, the interviewees did not seem to emphasize customer co-creation as such, but did promote the fact that value is something that is best delivered when the customer has a chance to be involved in the process of making it. Here the division between technologically driven companies and neo-PSFs was clear, since technology-driven companies felt more often that excessive customer interaction is more harmful than helpful. In conclusion, customers were seen as valuable when creating new services, but it was commonly noted that their involvement should be managed and controlled so that the service developed is not something that is impossible to formulate as a scalable concept. As noted by one of the interviewees:

"When you have pilot services, you gain insight on what needs to be done in order to satisfy the customer. And that usually results in success when done right." (Chief Executive Officer, Finnish Consulting Group)

Piloting and prototyping services that are innovative and new are important activities, but as mentioned before, the interviewees argued that these pilots and prototype services should be commercialized and standardized to the right extent by learning from iterations and thus finding concepts that work – and then scaling these to create success. The next chapter will move on to the concept of commercialization and its purpose in knowledge-intensive firms and their innovation processes.

5.3.3. Commercialization

"You can provide two things to customers, that is competitive advantage or cost savings. Anything else is rather irrelevant." (Chief Executive Officer, VTT Ventures)

The interviewees stated that the role for a commercialization activity in new service development is to create perceived value to customers. As noted above, the interviewees

felt that value is usually translated as monetary benefits for the beneficiary. **It was commonly argued that a business-to-business sale tends to be guided by value as a concept and is mainly successful when the beneficiary can be presented with clues of potential monetary value**. This is relatively difficult in a service context, and especially in a knowledge-intensive firm. The intangible nature of services was seen to be a problem for communicating value and the interviewees stated that effective sales seemed to be more about social ties and social capabilities than proven facts. As noted by one of the interviewees:

"You need to get up close with the customer. No-one can sell a concept as such, but they guide the expectations of customers in the right direction." (Consultant Director, SWOT Consulting)

Here the notion of concepts was mentioned again. The interviewees felt that commercialization is much the development of the concept to a state where it can develop the right kind of expectations within a customer. Most of the interviewees' companies did not have a formal, structured way of commercializing concepts and services, but there was a common understanding that **commercialization does guide customer expectations and helps to build up services that have commercial appeal**. The main issue with commercialization was perceived to be the nature of services that make it difficult to express and measure the potential of value delivered. One of the interviewees pointed this out:

"We need to be able to show what the benefit of our service to the customer is. Furthermore, our benefits are often stated as mere soft values, whereas business clients want hard facts and financial implications." (Service Portfolio Director, Fountain Park)

Most interviewees saw commercialization to work best to the extent where the company knows what its key services are but where the customer still feels that the service provided is unique and tailored to his or her requirements. Both technology developers and neo-PSFs alike saw commercialization as harmful, if done in a product-like manner (i.e. to a standard price, to a standard concept). There were some completely commercialized services in the interviewed companies that were mentioned to be quite successful in the marketplace, but the majority of revenue still comes from projects that are more or less customized and customer-tailored.

When discussing the concept of commercialization, many interviewees pointed out that the same problem of standardization-customization applies here as well. Commercialization was argued to be disruptive and harmful if it was to standardize the whole offering and remove customer-perceived customization aspects. Furthermore, commercialization was not seen as the concept is known in e.g. manufacturing, but more as a ways of communicating practical value and managing the expectations of customers.

In a practical sense, the interviewees agreed on the notion that **the firm which can commercialize its services to a state where monetary benefits can be defined with facts to prove it, would be ahead of the competition**. It also came to light that even though these monetary benefits are always not possible to define, it is of utmost importance to have proof that there is the potential of creating these benefits. Furthermore, effective commercialization was stated by the interviewees to be based on actual cases and references, suggesting that **a knowledge-intensive firm should focus on services that can be duplicated in order to have proof of value when faced with competition**. Here the interviewees mentioned that if a firm does provide services without strategic guidance, it can lead to the problem of having the potential to deliver a variety of services but not having enough proof on any of them to make the sale. Therefore it is important to focus the commercialization activity to such services that seem have market potential outside the pilot-customer.

The interviewees mentioned that it is important not to focus too much on commercialization and creating concepts that are easy to market and sell. An overkill of commercialization was said to lead to a service portfolio that is completely standard and not something the business customer wants. After all, customer requirements cannot be standardized even though the process of delivering services can be, to some extent. Even the technology developers argued that no technological solution is a customer solution without proper tailored services that are included in the package. Despite its limitations, it was understood by the interviewees that commercialization as such is good way to increase revenue and to make the complex knowledge-based services attractive to customers. As stated by one of the interviewees:

> *"We had a commercial success with a service that was completely packaged and formalized. However, then we had this commercialization-rage to formalize and package everything, which ultimately showed that you can't go overboard with commercialization. Luckily, we learned our lesson."* (Service Portfolio Director, Fountain Park)

5.4. Summary of findings

The problem space that is related to new service development in knowledge-intensive business service organizations is complex, ambiguous and usually withholds various, wicked managerial issues. It was argued by the interviewees that the process of new service development and innovation is usually ad-hoc and generally not managed as such, even though the more technologically driven companies did have some insight and generalized processes that were used to manage innovation. In relation to this, the interviewees stated that a generalized methodology for innovation would increase the potential of success and that such a process would be a significant improvement for the managers involved in new service development. Even the few companies that did have some methodology in place stated that it needs to be developed further and that it is only

at a pilot stage when the interviews were conducted. For the most part, the development of innovative new services was seen by the interviewees as a consequence of innovative knowledge workers, constant customer involvement, and learning from business partners and other actors, as well as a result of strategic alignments and evolving corporate goals.

In addition to the problems related with new service development processes, a number of managerial issues were identified by the interviewees. These were mainly related to problems in managing strategy in a knowledge-intensive business service organization, managing service delivery processes and commercialization activities, and managing customer involvement. In relation to these broad problems, all of the interviewees acknowledged that it is much different to manage innovativeness and new service development in a knowledge-intensive firm than it is to manage new product development in an industrialized company. As such, even the technologically driven larger companies saw that their technology development processes did not fit into a service context that well.

It was acknowledged by the interviewees in all types of firms that strategic management should always steer new service development, even if strategy is not as normative or comprehensive as it may have been in early strategic management literature and practice. Managers in both smaller and larger firms agreed that strategy is about identity management, since knowledge workers are best managed inherently, not explicitly and normatively. Moreover, strategy was perceived to be an umbrella concept that creates boundaries as well as possibilities for innovative employees to create and design new, successful services. Furthermore, it was said that since strategy should inherently guide the efforts of the company's employees, it should not hinder the innovative capability with an overkill of procedures and norms. Here one might be persuaded to think that larger firms need to have procedures and norms, which is true to some extent, but in this research all firms were unanimous that knowledge workers should only have generalized processes and best practices, not bureaucratic, overwhelming operating procedures.

Moving from strategy to operations, the main issue in new service development identified by the interviewees was the customization-standardization paradox. It relates to the notion that customers require tailored, custom services but managers should strive to standardize operating procedures and service delivery in order to gain efficiency, productivity and quality. Moreover, standardization was seen to be harmful, if it was done in a way that hinders innovativeness and/or flexibility. The solution for this, in all firms interviewed, was said to be the right amount of standardization behind the line of customer visibility, completed with a set of "spices" that make customer-perceived customization possible when delivered through interaction. This was possible by using best practices, detailed service concepts and standard operating procedures, which also

enabled knowledge sharing, scaling of services, and the duplication of expert knowledge.

In addition to the standardization-customization paradox, another managerial issue that was constantly brought up by interviewees was that innovation itself lies in the capabilities of individuals and their self-actualization needs. This promoted the notion of self-actualized innovation, which was seen as both an opportunity and a nuisance for management. The solution for managers was said to be the aforementioned inherent strategy and a pilot/prototype-centered way of creating new services. Both smaller and larger firms and even the neo-PSFs agreed that piloting is the best way to develop a rough service concept to a market-ready state. Piloting is then not just a method for smaller, usually technology-driven flexible companies, but for larger professional service firms as well.

Pilots and prototype services were seen to be of utmost importance, since professional services are usually best commercialized with previous cases done with notable clients and customers. Furthermore, it was argued by the interviewees that piloting and prototyping in an early stage would give valuable market information and enable customer involvement without extensive processes and investments. This was summarized well by a few of the interviewees:

"When you do things with pilots, you get standards on how things should be done. It's extremely valuable to get that pilot." (Chief Executive Officer, Finnish Consulting Group)

"It all comes down to doing the first project with a low budget, getting that reference case and then reaping the benefits." (Principal Consultant, Rongo)

Given the quotations above, new service development was seen as most beneficial when done rapidly, piloting with a real customer in a real-world environment. The ideas that were to be piloted were said to be found in social settings and networks, ranging from radical new ideas found from business partners, academic literature and competitors (both apparent and non-apparent) to incremental ideas usually discovered through interaction with customers and employees. Furthermore, knowledge-intensive business service organizations were said to be on a constant state of learning that forced to use informal, rapid development processes that could transform ideas to working customer pilot programs in a short period of time.

"When you have good ideas, they need to be commercialized to some extent. However, if you commercialize everything to a consumer product -level, you will soon notice that you are both anchoring your own innovativeness and not really understanding what the customer really wants." (Service Portfolio Director, Fountain Park)

Last, the interviewees stated that commercialization was to be taken on with caution and that relying on commercialization itself would not yield a set of successful services. Instead, the interviewees stated that commercialization should be used to manage customer expectations and to find concepts that seem to become apparent through the constant testing and evaluation of new, innovative services.

6. RESULTS – PART II: ACTION RESEARCH

6.1. Introduction

Recall RG1: Understanding new service development through the eyes of a knowledge-intensive business organization.

This chapter provides insight on the first research goal, providing a comprehensive analysis on the management of new service development within a knowledge-intensive business organization, Data Rangers Oy. The company has been briefly introduced in chapters 1 and 4, but here the focus will be on the issues that are directly related to the new service development project started in summer of 2012.

Data Rangers Oy is a company that has relied on its software solutions for some time. The solutions offered have a solid customer base globally, but the company could not rely on software itself in order to succeed in the marketplace. Hence a set of consulting services have been offered to customers in a non-systematic, non-commercialized manner. This has not been a problem since the software produced has been the primary source of competitive advantage. However, as customers and the economy in general are moving towards services and solutions instead of products, a paradigm shift from the product-based model towards a set of commercialized, professional services was seen as a primary strategic initiative.

Moving from the product-based view to a service-oriented way of running the business has proven to be a challenge. There has been some effort to develop the service offering, but so far no attempt has taken on as a commercial success. The company does provide consulting services as such, but in a non-formal, non-structured way. As such, the current service offering has indeed "happened" instead of being constructed through a process.

During the summer of 2012, Data Rangers took initiative to allocate vast resources and top management support for creating the aforementioned paradigm shift. The company realized that it would need a new employee or consultant to help with the shift from products to services. As a result, the researcher was appointed as a business development consultant to design and develop a new set of knowledge-intensive business services that would form the basis of the company's business. In addition, the goal was to comprehend how to do so (creating a way of managing innovation) as well. Figure 19 illustrates the area of interest in the action research phase.

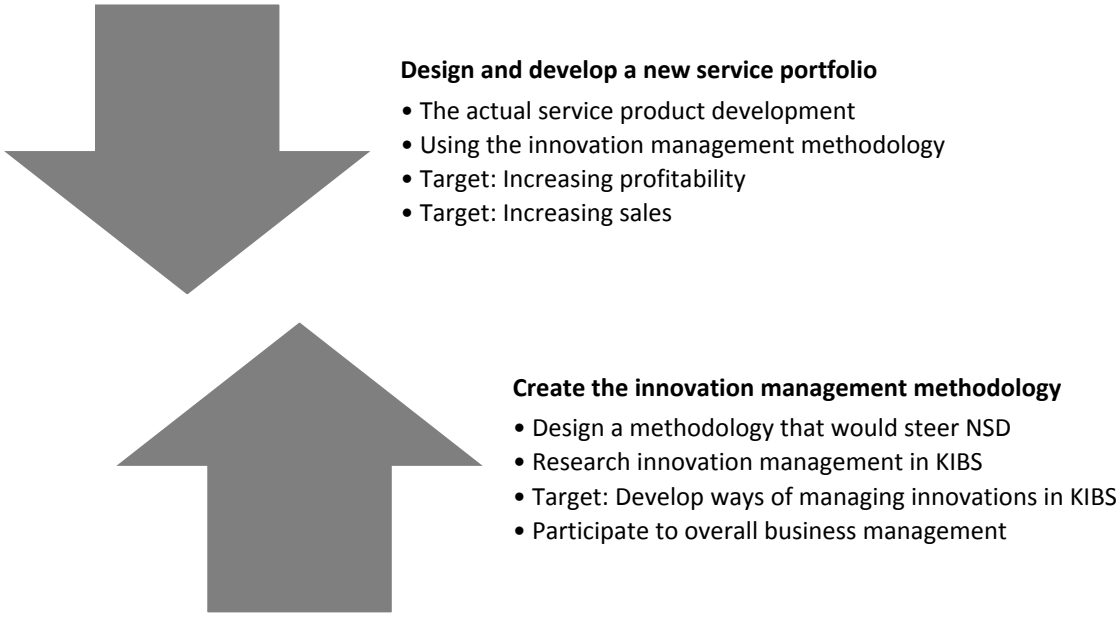

Figure 19: Framework for the action research phase.

Figure 19 was the starting point for this research. The action research fluctuated between the two main tasks, ultimately resulting in profitable business that could give sustainable competitive advantage for the firm. There was no clear division between these two main concepts, since the innovation management methodology was always tested through the development process of the actual service portfolio, and the service portfolio development and its issues affected the development of the methodology in return. The next chapters will analyze these two aspects in parallel; managing new service development in a knowledge-intensive firm, its strategic issues, the development process and the managerial issues related to it from a practical viewpoint.

6.2. The development process

The development process itself is a complex activity which requires insight and understanding of knowledge-intensive firms and the management of knowledge work, as well as new service development. The theoretical background presented earlier works here as the main basis for creating such an understanding, but as there is scarce literature on the development of services in a knowledge-intensive context some completely new ways of managing the development process are presented as well. This chapter is divided into four subchapters that were identified as main parts of the development process. These are strategic planning, idea generation and concept development, hypothesis-driven development, and full-scale launch, respectively. Figure 20 illustrates the high-level process.

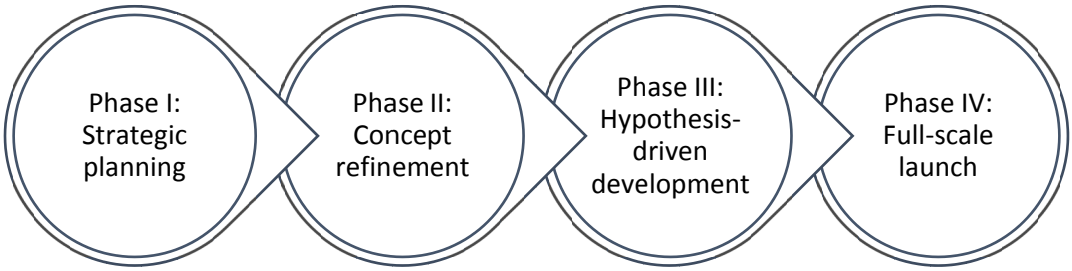

Figure 20: The high-level development process (Data Rangers Oy 2012).

This high level process only outlines the main elements of the development process. They are not the methodology in itself or something that should be treated as the development process. The purpose of this high-level illustration is merely to point out the key aspects that could be seen as milestones of the new service development project, but they do not work as a managerial methodology if used without the knowledge of its sub-elements.

6.2.1. Phase I: Strategic planning

Before new services can be created or a paradigm shift from products to services can be adopted, there needs to be a clear strategic initiative to do so. During a strategy workshop, it was understood by the development team that if a single person or a team strives to do so, the effort will presumably fail due to the lack of top management support. The development team started with the assumption that even in a knowledge-intensive firm, strategy does provide the boundaries for knowledge workers. This is because **strategy itself is the common understanding on where the company is headed and it should always steer the daily efforts of the company's personnel**. So despite the autonomous workforce, there should always be a common goal for doing business, and to design and develop new services and products. After the workshop, this ideology was put forth by arranging an informal company event where employees were given a chance to comment on the new strategy and to develop it in a way that would support their own identity. This was not done overnight, but through a set of conversations and informal meetings that followed the company event.

It was quickly understood that moving from product-based ideologies takes time, as the company's core products are seen as the ways of doing business and services are seen as add-on, whereas the goal was actually the opposite. The product-based view was rooted in the beliefs and assumptions of the workforce and hence it is still seen as a core resource. This is not to say that the products are indeed the key for success, but to point out that a service-oriented way of conducting business needed a change in the culture

and management mechanisms that underlie operations. This process of changing assumptions and culture is still ongoing. However, most of the employees now see services as the primary ways of competition, whereas the software solutions are still the main facilitators of competitive advantage. The facilitating aspect of products is important here, as competitive advantage actually lies in the mix of people and technology that is in the mix of products and services.

The service development team had a formal meeting on what was accomplished a week after the roll-out of the new strategic initiative. It was mentioned by the CEO that the workforce seems to align well with the new ideology, which was seen as a green flag that allowed the service development team to move onwards with the process. The service development team then had an informal meeting that was intended to create a broad timeline that would steer the new service development process. As a result, it was agreed that the next steps were concept search and concept development, but it was also understood that there is a lack of knowledge in regards to the methods on how to manage it. This was a responsibility for the researcher, and an exhaustive literature review was conducted in order to gain understanding on the subject. The results were then briefly shared with the service development team so that there was a clear understanding on what really needs to be done.

The strategic planning phase continued with an additional strategy workshop which was designated to point out the market need, competition and threats for a broad idea on what the service portfolio would be. The workshop continued with conversations and e-mails, but a consensus was reached that there was a clear niche that could be reached with the company's capabilities and resources. With this niche in mind, the service development team had a meeting were the boundaries of innovation were selected. This meant that the search for ideas and concepts was limited to the niche found in the marketplace and thus inherently tied to strategy as well. With informal meetings and face-to-face conversations, the service development team encouraged the whole company to think about ideas that would be beneficial for the common goals and intentions of the company. By doing so, employees felt that they could participate and be a part of the company's future, promoting the concept of identity and ultimately yielding innovative new ideas.

In short, strategic planning was the creation of a common understanding on where the company should be in future and how it will be reached. Reaching this common understanding required top management support and employee involvement, a number of meetings and conversations and a clear view on why it should be done. The service development team agreed that strategy could not be forced as it should be welcomed by the whole company. Executing this in practice was not something that could be done in a single meeting, but in a series of conversations, informal events and, for the most part, ongoing lively debate between knowledge workers. It should be mentioned here that this may be much easier in a small, entrepreneurial firm than in a large professional

service organization. The managerial challenges of larger firms are much different, since there is a bigger autonomous workforce and such internal social structures and norms that do not change quickly or respond to changes that well. Despite this, some general insights on how to conduct strategic planning of new service development may be put forth. Figure 21 illustrates the problem space of strategic planning and its relation to new service development at Data Rangers.

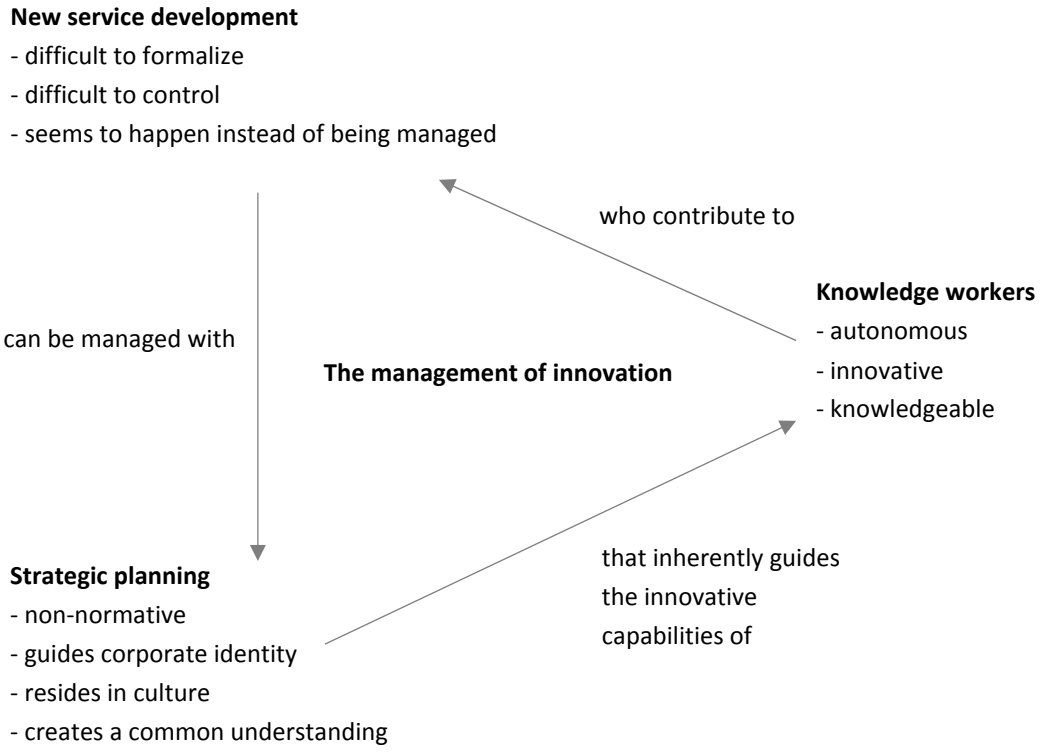

Figure 21: The management of innovation (Data Rangers Oy 2012).

The cycle in figure 21 illustrates what needs to managed in a knowledge-intensive firm in respect to innovation and new service development. The cycle may be quicker to complete in a smaller firm, but the principles and problem space can be adjusted to a different type of knowledge-intensive firm as well as a larger corporation. The service development team at Data Rangers summarized this as the process of innovation management, which ultimately results in successful new services when understood and managed in the right way. The key point here is to understand **that strategic planning is the link between innovative employees and their contribution to new service development**.

6.2.2. Phase II: Search for concepts

The idea for creating a set of consulting services as the primary ways of doing business had evolved through time, after seeing that customer value could be generated by providing services on top of the product-based solutions. When discussing the matter in

a meeting, there was an idea within the service development team that the consulting services offered by most professional service firms that were seen as competitors were in fact very rigid and required a high investment in both technology and people by customers. Moreover, the company understood that customers were usually unsatisfied with either buying plain management consulting services or just technology. As such, customers actually wanted the fact-based reasoning provided by technology to support the "traditional" management consulting efforts, but in a form of services that would create value with low investment and in a short time. This was seen as the market gap that the new service portfolio would fill.

To put it in short, the main idea was underlined by realizing a trend in customer behavior and understanding the inadequacies of competitors' offerings, which was a result of ongoing customer collaboration and time spent on the marketplace by the company's consultants and managers. This was put forth in an idea workshop, where each service development team member had a chance to comment and participate to the idea generation activity. The ideas varied a lot, in terms of customer segments, key resources used to deliver the service, market needs, and other main variables. However, the idea workshop was not intended to cut out ideas but to simply gain as much ideas as possible. Then, after the ideas were written down and explained, another meeting was arranged where the service development team refined and selected the most insightful and applicable ones for the development phase. In a small firm, it is relatively straightforward to generate ideas with the whole company, but in a larger firm, a more strict idea generation procedure might be helpful.

Within Data Rangers, the search for concepts was managed by the service development team and steered by the new service oriented strategy. Each team member had a different idea on what the concept should be like, so a convergence of these separate views was done with informal conversations and an idea refinement workshop. Even though idea generation is in the heart of innovation, there is no single idea as such that was generated but a set of smaller ideas that resided in marketing, delivery processes, service offering, technology-people – fit, customer management and commercialization, to name a few. This underlies that service development is much different from product development, where one might be persuaded to think that an idea of product could actually be the most beneficial thing a product developer, a manager or an expert could generate.

At Data Rangers, the employees feel that they belong to the company and are thus guided inherently by strategy which ultimately guides their urge to build the company and to innovate as individuals. Here it was seen that the service development team succeeded in strategic planning, since ideas were generated within the boundaries that were set forth in the meetings and conversations in the previous phase. The idea generation phase and its workshops were quickly moved to conversations and meetings that were designated to create concepts from the ideas generated and acquired. These

events were more controlled, since there was a clear understanding on what a concept actually is and what it should include. Employees participated in generating ideas that align with each other in the dimensions of the service. The dimensions of the concept were threefold, namely back-office operations, front-office operations, and customer perceived service. Ideas were then segmented to one of these dimensions and then a number of meetings and conversations were held to align each of these dimensions in a way that creates synergy (i.e. the ideas do not clash with each other).

The service concept was seen by the service development team as most crucial for success, as it drives the internal management and operations, providing a clear view on what the service actually is and how it is conducted and delivered. It is not that customers have specific service products that they can purchase, but more that the knowledge workers have a solid methodology on how to provide it. This was seen as the most important aspect of new service development from a managerial perspective by the company's management; how can autonomous knowledge workers be managed in a way that does not hinder innovativeness but provides a standardized set of procedures that provide efficiency and quality while preserving customer-perceived value that resides in tailored services. The answer was seen as a set of managerial practices that guide innovation without hindering it. Figure 22 summarizes these practices and principles.

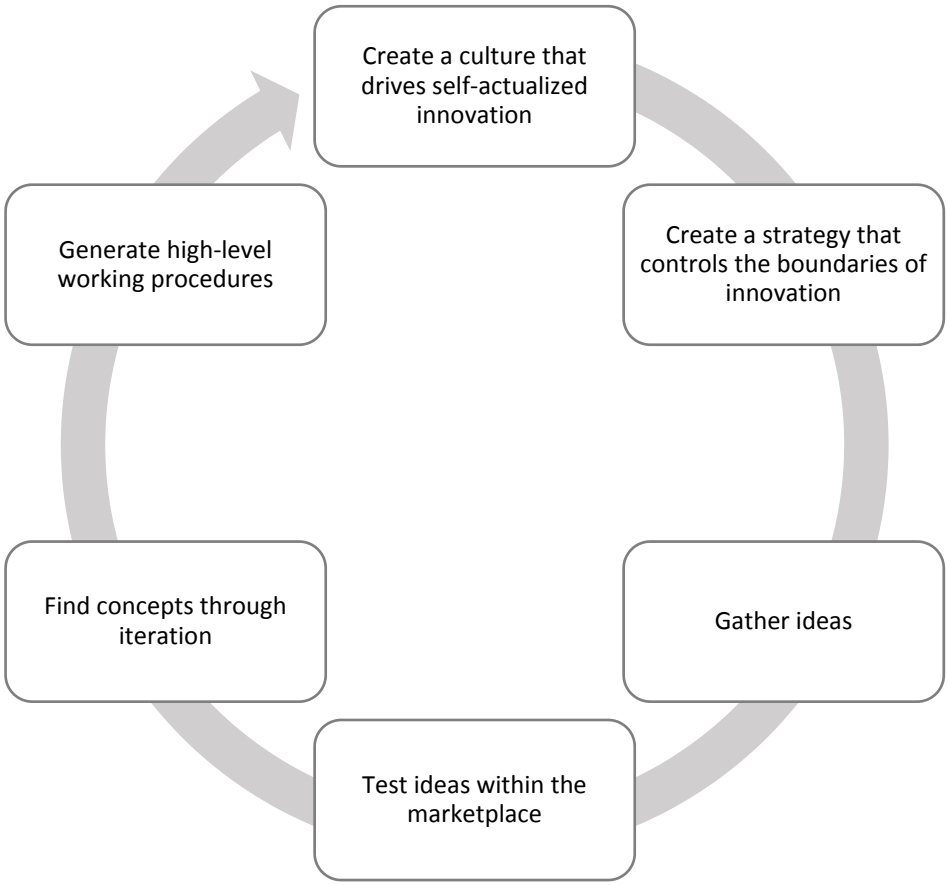

Figure 22: Concept actualization (Data Rangers Oy 2012).

As seen in figure 22, the steps of delivery do not need to be strict, but there needs to be a standardized process to some extent, otherwise management will result in chaos. This process should be discovered through iterations which are developed through the constant testing of rough ideas. Furthermore, the service development team was adamant about the fact that **high-level formalization should not be seen as a limitation from the customer perspective, but as a ways of providing quality and value**. This does not hinder innovation, since innovation itself is not controlled by procedures but by strategy and corporate identity. Instead, formalization comes as a result of testing ideas and finding patterns that work.

At Data Rangers, this was done with a series of customer encounters where rough service ideas were put to the test and then analyzed with the service development team. It quickly became clear that customers require tailored services which are built on this high-level conceptualization. The development team then agreed upon a right amount of standardization, which was mainly focused on the back-office (i.e. in-house service delivery activities) tasks and operations and still seen by customer as tailored. Figure 23 illustrates this ideology.

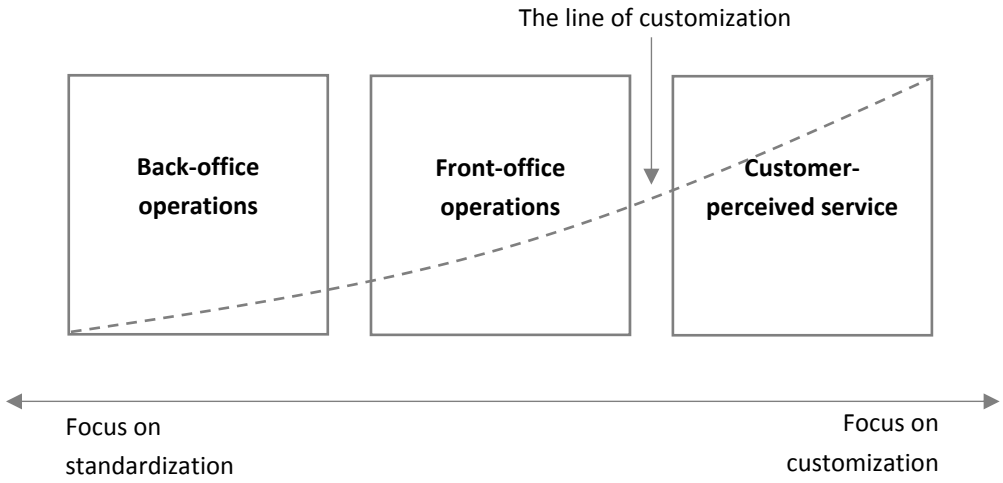

Figure 23: The standardization-customization continuum (Data Rangers Oy 2012).

Figure 23 points out that the service concept should focus on standardization in its back-office operations and then promote tailored, customized services to the customer. The line of customization means that there needs to be customization, but it should be targeted to the customer perceived service –part of the offering whereas standardized concepts and methods should be promoted in the delivery systems within the firm. The development team at Data Rangers emphasized that standardized processes and working procedures do not hinder customization as such, as they are merely a way of delivering and communicating quality. Customization can still be achieved when the procedures and working practices are given from a holistic viewpoint, not in a detailed manner. In addition, leaving room for customization was also seen as beneficial for the knowledge workers, not just the customer. The key here was to acknowledge which operating

procedures seem to hold as standard, even though the service delivered varied in respect to what the customer perceived. Understanding this requires iteration and constant testing and piloting of the service, but in return there is a possibility to develop an efficient but yet tailored service – something that is essential for competition.

The search for concepts, as seen at Data Rangers, **is not an activity that creates a complete service as an outcome**. It is a way of **transforming smaller ideas that have been acquired or evolved through time to the state of a minimum viable concept that is a concept which has the least amount of information and detail but that enables the discussion and testing of it**. For instance, an idea of providing data analysis is not a concept, it is an idea. When the idea is refined to the state that it can be managed and analyzed, it becomes a minimum viable concept – something that can be explicitly stated but that cannot be delivered to customers with the full extent of the service. This gives flexibility to the process, as the concept is only refined to a state where it can be understood and thus tested within a target market. This testing of the minimum viable concept will work as the main ideology for the next phase.

In this chapter the main issues and concerns of idea generation and concept development have been addressed. Given that these activities should result in services that yield customer-perceived value and ultimately competitive advantage, Data Rangers used a specific methodology to develop the concept in a way that gives such results. Furthermore, the knowledge-intensive context was considered an opportunity, not as an aspect that would make developing something new impossible or completely ambiguous. However, different types of knowledge-intensive firms will have different managerial issues, but the management of innovation with a knowledge-based workforce should remain the same.

6.2.3. Phase III: Hypothesis-driven development

The development methodology at Data Rangers was perceived to be problematic to design since knowledge as a key resource is relatively ambiguous and services are suggested to happen, instead of being systematically developed. Given this as a starting point, new service development in a knowledge-intensive context can be perceived as non-manageable. This was proven to be incorrect at Data Rangers, where the new service development team started with the assumption that such knowledge-intensive services can be managed and developed in a structured manner. The development team had a formal meeting, after a series of conversations and research, to choose a development method. As seen in chapter 3, there is a myriad of development process models, but each were quite rigid and normative to adopt in a knowledge-intensive firm that is flexible and that can put ideas to working concepts in no time in respect to traditional product development. The method chosen by the development was based on a methodology called hypothesis driven development (see Eisenmann et al. 2012 for

original theory). There were some competing ideologies, but after hearing about the methodology chosen, it was quickly adopted as a good solution.

The service development team agreed that the process should enable rapid iterations, continuous testing and service piloting in a short time. Knowledge-intensiveness and services as the key for economic exchange were seen as opportunities. The team understood that many larger firms and even smaller, but more normatively managed firms take too long to respond to a changed market. So the development process itself was suggested to bring competitive advantage, since it should deliver services faster to the market, outperforming those of competitors'. The service development team modified the original theory in two workshops and built a model of concept development that would be used to design and develop new services. Given that strategy already controls the innovative activities of employees, it was designated to control the development phase from ideas to "business-as-usual" –offerings. The methodology used, in its roughest form, is illustrated in figure 24.

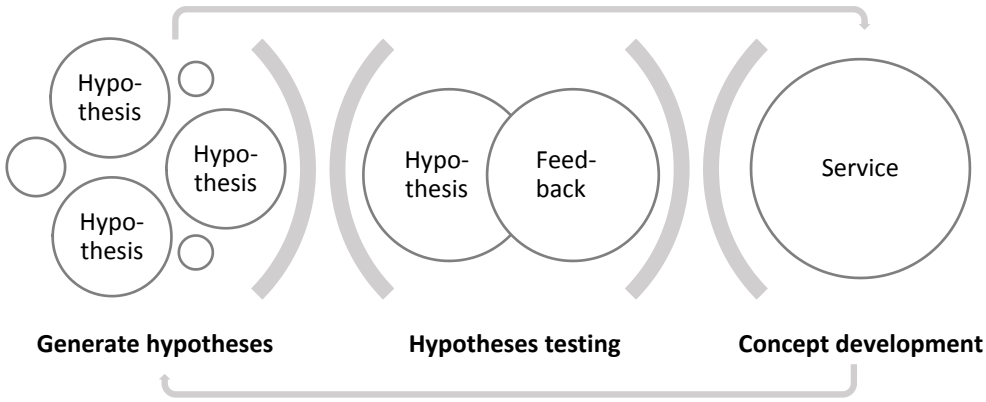

Figure 24: Hypothesis driven development for knowledge-intensive business services.

Figure 24 outlines the overall idea of hypothesis driven development. A service (or just an idea) can be translated into hypotheses, which are then tested as early as possible and translated into concept development ideas. The loop is constant, but is much more rapid than what is usually the case in any development methodology. The creation of this ideology took some time, since it clearly differed from traditional ways of product or service development.

The development team started the debate of concept development methods by addressing the fact that piloting is the best way to develop a service idea and that reference cases are the best way of communicating value and selling professional services. This created two main managerial issues; how can Data Rangers maximize the amount of reference cases in a short time period, and how can a rough concept be developed to a working service offering. The development team had a consensus that both issues could be tackled if the employees were able to test the service with actual

customers, with actual pilots, but without having to put the service through a long development process. Here one might be persuaded to think that larger companies cannot function this flexibly, but it might be wrong to think so, since knowledge work management is, at least theoretically, a matter of trust and corporate identity, not company size.

The development team promoted this new view on service development through the following reasoning:

"If a large company has a long, exhaustive development process, it is usually a method to control quality and to enable management. However, a knowledge-intensive company usually resides on the intellectual capital of its employees and if there is a trust to their capabilities, there should be no problem to let these employees innovate and develop services with a more generalized process, and with more freedom. Usually the debate is whether or not the employees ***are able to innovate****, which as a rather Tayloristic view on management. In a knowledge-intensive firm, however, it is more about identity that is if employees feel like they* ***want to innovate****."* (Chief Executive Officer, Data Rangers Oy)

This reasoning has clear managerial upsides. Consider a company where people want to innovate; the employees are full of ideas, but there is no way of transforming them to services without exhaustive paperwork. This usually leads to decreasing motivation. Then again, if development process are put in place (in a reasonable manner), but the employees are treated as if they do not have the capabilities to innovate, motivation is again decreased and so is innovative capability. Figure 24 illustrates the problem space of innovation and innovative employees. Derived from the reasoning made by development team, employees at Data Rangers understood that there needs to be a process, but it should be something that can be carried out in less than no time by the innovator herself, since the strategy and corporate identity promotes this kind of behavior. After a series of meetings and debate, the aforementioned hypothesis-driven development methodology was refined to the company's needs to work as a concept development process.

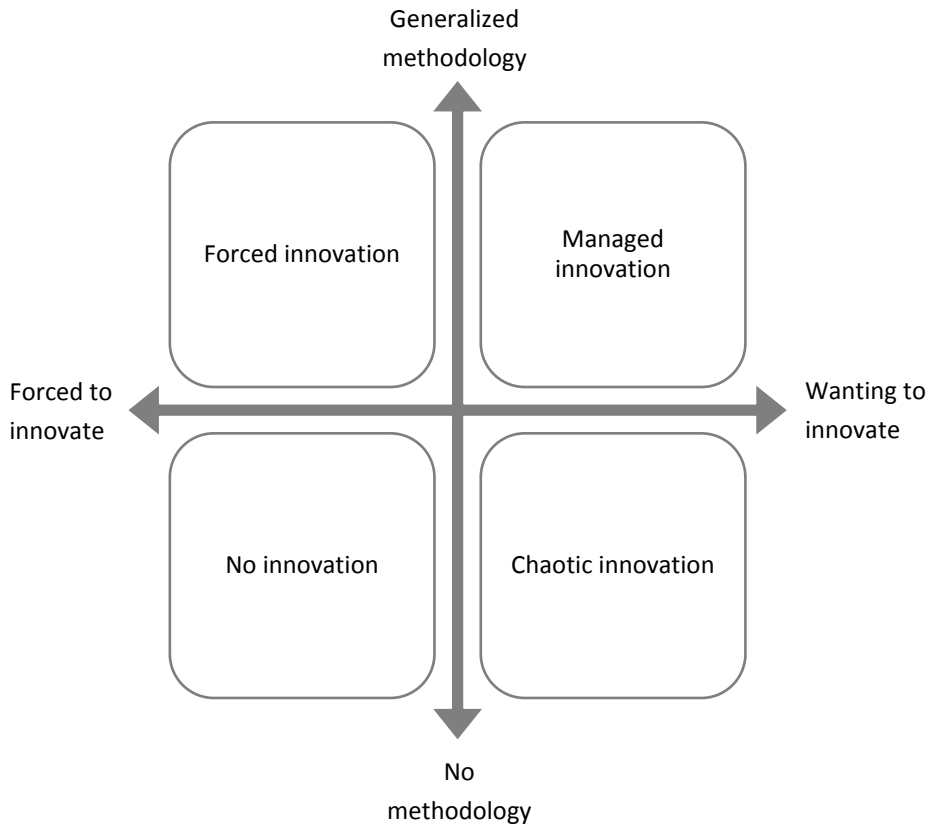

Figure 24: Innovation types (Data Rangers Oy 2012).

Understanding the managed innovation is clear choice and that it would require a generalized methodology, the concept of hypothesis driven development was adopted by the service development team to the knowledge-intensive context by removing some unnecessary activities that are mainly for startups and by adding some concepts that are required to manage services in general. First, strategic management was added as a necessary pre-phase, since new service development was seen to unsuccessful if not guided by a clear strategic intent. Second, the original model was generalized to a level where it would work as a methodology for new service development, without bringing an overkill of formalization that would result in hindered innovative capability. Third, the methodology was issued to a phase of the development process were rough concepts were identified and the strategic intent was clear, but where the concepts were not tested yet and they needed to be rapidly developed to a state of full-launch.

Hypothesis-driven development is, unsurprisingly, driven by the use of so-called critical business hypothesis that are such notions, ideas or arguments that need to be proven as plausible if a new service is to be successful. This is best explained with a brief example:

> A management consulting firm has an idea of a concept that is focused on the concept of change management for large manufacturing companies. The company develops a rough concept, a so-called minimum viable service, which is the narrowest possible concept with the lowest amount of investment possible

> but which can be tested in the marketplace. This could be an outline of what is offered and one or two key resources who could deliver it. The company creates hypothesis of this service, such as “the service can be delivered in different parts, from which the first is highly intriguing and easily sold”, “the service can be generalized to some extent and then scaled up”, or “the service can be communicated as different from those of competitors’ rivaling concepts”. These hypotheses are then tested by the company’s personnel with a set of potential customers and then reported. After doing this, the company has acquired information on the critical issues that their new potential service has from actual customers, without having to invest extensively or to push the service idea though an exhaustive, normative process.

The point here is that knowledge-intensive business services are easily drafted to a state where market information can be acquired. It is not necessary to withstand such processes from the industrialized era, as new service development can be rapid and more flexible. However, as seen at Data Rangers, this still needed to be managed and thus the hypothesis-driven development gave an excellent framework of doing so.

6.2.4. Phase IV: Full-scale launch

The full launch of the service portfolio is scheduled to start in the beginning of 2013. However, formal pilots were launched during December 2012, when the service concepts were first tested in a real-world environment. As noted earlier, this was preceded by the testing of the service concept’s main business hypothesis and a thorough development process that was based on piloting and rapid concept development in itself. Therefore, it cannot be stated that the full-launch was actually the launching of the first service delivery, but a milestone of the development process where the development team could agree that the concept is refined to a state that could be marketed to a broader customer base.

The service development team had two formal meetings where the marketing material and sales processes were agreed upon. In these meetings, the findings from the hypothesis-driven development phase were analyzed once more and then used to modify the general understanding on what the service offering actually is. It was perceived as vital for the company that everyone shared the same vision of what is actually offered and why is it offered (i.e. what are its benefits). By doing so, the service development team would have a clear, common idea on the developed service and thus it could be marketed and delivered with consistent quality even if different people were involved in different service deliveries.

After the first pilots, the service development team gathered to analyze the findings and to create a plan on what needs to be done next. Therefore, it can be argued that the service development process iterates itself, and is never actually complete. However,

when the full-scale launch is done (i.e. the milestone is reached), it does tie up the strings that were left open in the beginning of the process. This has two main advantages. First, resources are again made available for other tasks and new ideas. Second, it shows to the top management that the project is complete and hence underlines the fact that new service development should be managed. Therefore, a full-launch milestone was appointed and ultimately reached by the service development even though it was, from a development view, somewhat unnecessary. The point here was that the firm's employees, management and service development team needed to point out a date when the project itself is complete, even though the service itself continues to evolve.

6.3. Summary

The new service development project at Data Rangers had new ideas on how to manage innovation and new service development in general. The findings were related to strategic management, innovation types and the motivation to innovate, development processes, and, for the most part, the management of knowledge workers in new service development.

Strategy was perceived to be of importance when designing and developing new services at Data Rangers Oy. A clear strategic intent and the organizational support behind the efforts were seen as essential for success. This resulted in a strategic planning phase in the development of the new service portfolio. By doing so, the service developers had the support of the company and a clear view on what needs to be achieved within the process. Furthermore, strategy was seen as tool for innovation management, as it inherently guides the innovative activities done by the company's employees.

In addition to strategy as a significant phase, Data Rangers spent time searching for concepts that could be developed and modified to successful services. Ideas were not searched from customers only, but from literature, business partners and competitors as well. It was quickly understood that these ideas were not always radical and they can be directed to different elements of the service concept. Many ideas resided in the development team's individuals, each having a different view on the matter and on what really needs to be developed in order to stay competitive. Understanding this did take some time, since the biases and classic anchoring effects of the development team's members affected the objectivity of new service development. The key solution was to implement a development methodology that would be generalized to extent that innovation can be managed, but that would leave knowledge workers room to create.

This generalized methodology was perceived as vital for the management of innovation. Furthermore, strategy and corporate identity make employees want to innovate, which was seen as a prerequisite for new service development. Understanding this was done

by mapping innovation types in relation to employees actually wanting to innovate (as opposed to being forced) and having a process or methodology in place (as opposed to having no managerial process in place). As a result, the development team chose to develop a generalized methodology that would steer the knowledge workers towards the "managed innovation" –type.

The generalized methodology was done in two parts, namely a broad roadmap consisting of four steps (strategic planning, search for concepts, hypothesis driven development, full launch), which guided the main process for actual service development, i.e. the hypothesis driven development process. Whereas the four high-level steps were identified as necessary to the new service development project as a whole, hypothesis driven development was seen as a way of giving employees a tool to innovate and to test and deliver services without an overkill of managerial processes and norms. Furthermore, it could be done rapidly and with little investment, which was ideal for the purposes of the firm.

Using the aforementioned development process, it was also understood that service development should be mainly concerned with piloting as early as possible and then learning the best practices and concepts that seem to work well with most of the customers. This gave the possibility to learn from doing, which ultimately reduced the amount of non-value-adding tasks done within the company. Furthermore, since the innovators were able to be the ones who deliver the service, motivation and responsibility were self-actualized.

There is no solid proof of the benefits of the methodology presented here or the performance of the new service offering. Even though the service concept did seem to generate new sales rapidly and was perceived as valuable by customers, there is no way of proving that this was a result of the methodology as such, but maybe because of the enthusiastic, capable employees and their motivation to create something new and valuable for the good of the company. Nevertheless, the outcomes did promote overall firm performance, profitability and increased sales. Furthermore, the new service offering was created quickly and seems to achieve market synergy, without an exhaustive development process. The employees were also motivated to the process and actually wanted to be involved in the development process. These may be a result of various managerial practices, but since the firm was intensively involved in the process presented here, the methodology is not without potential.

7. CONCLUSIONS

7.1. Introduction

"If we designed cars the way we seem to design services, they would probably come with one axle and five wheels" (Behara & Chase 1993, p. 87).

This research started by acknowledging that deregulation and the advent of competition have changed the rules of the game for service companies (Gordon et al. 1993, p. 135; Johnson et al. 2000, p. 1; Edgett 1994, p. 40). Adding to this, competition requires constant design and development of new services, so it is peculiar that new service development literature is scarce and focused on only individual domains of innovation instead of the concept in its entirety (see e.g. Magnusson et al. 2003, p. 111; Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175; den Hertog et al. 2010, p. 491). As a result, the science and practice of new service development has been referred to as a 'black art' (Kelly & Storey 2000, p. 45).

In addition to the scarcity of literature in new service development, there is even less understanding on the topic when looked through the eyes of a knowledge-intensive business organization (Valls-Pasola & Amores-Bravo 2012, p. 80). Furthermore, adding the notion that knowledge-intensive firms have taken a leading role in our economy, it is extremely surprising that new service development has not been studied in such companies. This research has provided new insight on the topic, useful for both academics and managers, directors and new service development practitioners in knowledge-intensive firms, given that they understand the practical implications[7] of KIBS.

The next chapters will analyze the contributions and added value of this research in detail in relation to the research questions; (RG1): *understanding new service development through the eyes of a knowledge-intensive business organization,* and (RG2): *finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business services.*

[7] See Käpylä et al. (2011, p. 316) for critique on managerial relevance of KIBS-related research.

7.2. Discussion

First and foremost, this research has taken on a view on new service development that does not apply to a certain domain for innovation, but takes on a holistic perspective on the subject. This directly complements the propositions set forth by den Hertog et al. (2010) and Ordanini & Parasuraman (2011) who both implied that there is a need for comprehensive research that does not reside on separate domains of innovation. Furthermore, this research does comply with the notion that our current understanding of the development processes and managerial practices in new service development is inadequate (see e.g Menor et al. 2002, p. 136; Magnusson et al. 2003, p. 111), perhaps even more so in knowledge-intensive firms than in other service companies.

This research identified a number of managerial issues and practices that would result in successful new service development in knowledge-intensive business services. Most of these issues and concerns were complementary to previous literature, but some new insight on the subject was also added. Table 10 provides a summary of these findings and their relation to previous literature. These are discussed below.

Table 10: A comparison of managerial issues and practices in knowledge-intensive business services.

Managerial issue	**Complements**	**Questions**
Control innovation with a new service development methodology	Menor et al. 2002; Cooper & Edgett 1999; Kelly & Storey 2000; Njissen et al. 2006; Johne & Storey 1998; Oke 2007	Allen & Hamilton 1968; Bowers 1985; Donnelly et al. 1985; Johnson et al. 1986; Anderson & Pennington 1992; Palmer & Cole 1995; Scheuing & Johnson 1989; Cooper & Edgett 1999
Manage innovative capabilities and performances with inherent strategic management	Alvesson 2004; Blackler 1995; Ejler et al. 2011	de Bretani 2001; Martin Jr & Horne 1992
Create a culture where innovation and discipline coexist	Davenport 2010; Swart & Kinnie 2003	Alvesson 2004; Cooper & Edgett 1999
Use customers early on in new service development, but do not reside only on co-creation	Ordanini & Parasuraman 2012; Magnusson et al. 2003; Grönroos 2011; Alam & Perry 2002	Vargo et al. 2008; Tronvoll et al. 2011; Lundkvist & Yaklef 2004; Cooper & Edgett 1999
Customize the customer-perceived service	Muller & Doloreux 2009; Edvardsson 1997; Grönroos 2011	Shostack 1984
Standardize the practices used to deliver the service	Grönroos 2011; Lovelock 1992; Cooper & Edgett 1999; Shostack 1984; de Jong et al. 2003	-

As empirical investigation in new service development suggests that the process of new service development and innovation is a critical element of successful development (Menor et al. 2002, p. 140; Cooper & Edgett 1999, p. 23; Kelly & Storey 2000, p. 52; Njissen et al. 2006, p. 241; Johne & Storey 1998, p. 200; Oke 2007, p. 570), it was perceived by the interviewees that such a process is in fact essential for success. However, the difference was that the process should not be exhaustive and rigid (such as the ones from literature, e.g. Allen & Hamilton 1968; Bowers 1985; Donnelly et al. 1985; Johnson et al. 1986; Anderson & Pennington 1992; Palmer & Cole 1995; Scheuing & Johnson 1989; Cooper & Edgett 1999), but flexible and non-normative (closest to the ideologies from Johnson et al. 2000 and de Jong et al. 2003, with limitations).

This general process was argued to work best if it could rapidly launch new services and put ideas to practice with customers early on, and if done from end-to-end by the same employees. Furthermore, this research questions that knowledge workers do not comply with processes (see e.g. Alvesson 2004; Davenport 2010), as the interviewees all stated that these employees quickly learn the upsides of processes, when they are managed to the right level. Processes, in their usual sense, are of course too rigid and normative for knowledge work, but innovation still requires a generalized process that helps these employees to design and develop their ideas. By using a generalized process, the workers engaged in knowledge creation are given adequate structure to perform productively (Davenport 2010, p. 23).

Moving to the aspect of strategic management, some of the previous literature (e.g. Ejler et al. 2011, p. 86; Alvesson 2004, p. 124) seem to have the first principle right; new service development in knowledge-intensive firms should be steered by strategy and that strategy is less deliberate and less controlled than what is usually perceived as strategy (questioning formal, numerous strategies, as proposed by e.g. de Bretani 2001; Martin Jr & Horne 1992). This was complemented by this research as the interviewees in chapter 5 and the case company in chapter 6 both had the understanding that strategy is essential and it should guide new service development efforts in a way that promotes the development of the company in the long run. Furthermore, strategy was seen by the interviewees and the case company as an umbrella concept that inherently steers the self-actualized innovation efforts of the workforce and that this is the best way to manage innovation in knowledge-intensive firms.

It has widely been argued that ideas and hence new services “pop out” in a non-managed way (see e.g. Njissen et al. 2006, p. 241; Cooper & Edgett 1999, p. 32; Martin & Horne 1992, p. 62; Lovelock 1992, p. 31; Dörner et al. 2011, p. 39; Menor et al. 2002, p. 136). As argued by the interviewees and noted in the action research phase, this is not true in knowledge-intensive firms. Services do not happen, but the management of new service development from ideas to services is typically informal and not deliberately planned as such. New service development is the management of

innovative people that come up with ideas that are beneficial for the company and put them into practice as a result of strategic management, corporate identity, and the enablement of self-actualized innovation.

In relation to customer involvement and co-creation as a phenomenon (see e.g. Vargo & Lusch 2004a; Tronvoll etl al. 2011), this research is in line with Magnusson et al. (2003), arguing that these concepts have become practices without evidence of their merits. As de Bretani (2001, p. 182) argued, the customer comes first when innovation is concerned – which was also pointed out by the interviewees and the case company. However, in relation to customer involvement, it was also perceived that an overkill of involvement and co-creation was seen as more harmful than helpful; possibly arguing that co-creation in itself is more of a managerial hype than fundamentally important practice. Furthermore, the customers' key role in idea generation is not complemented (Lundkvist & Yaklef 2004), as they are merely a source of incremental, evolutionary ideas that do not necessarily lead to any service innovation as such (see Ordanini & Parasuraman 2012 for a complementary view).

As noted by Davenport (2010, p. 34), the ideal situation[8] is when structure creates a climate in which innovation and discipline coexist – and therefore that promotes all of the dimensions instead of looking at one for a quick fix. Discipline and hence standardization promote efficiency, quality and managerial performance (complementing e.g. Grönroos 2011, p. 468; Lovelock 1992, p. 31), but customization is most important for customers and thus market synergy, suggesting that there needs to be room for innovative, non-standard tasks and activities (complementing e.g. Muller & Doloreux 2009, p. 69: Edvardsson 1997, p. 37, questioning Shostack 1984 for too much bureaucracy). This search for balance between freedom and discipline is true for both innovation management within the company and delivering the new services to the market.

As a final argument, Bessant & Tidd (2007, p. 10) noted that the heart of innovation lies in generating ideas, selecting the good ones and implementing them. This is modified in the light of knowledge-intensive business services to state that the heart of innovation lies in the management of the individual knowledge workers and their innovative capabilities through inherent strategic management and corporate identity. Management is no longer the screening facility where ideas are presented and then either fail or flourish, but a supporting activity that creates a climate that helps and encourages employees to innovate and deliver these innovations to customer solutions with a solid discipline, and with the corporate goals in mind. Professionals do not necessarily need

[8] It should be noted here that even though Davenport (2010, p. 34) describes the ideal situation quite well, his argumentation is based on an old-fashioned new product development situation, which should be used with caution in a service context (see Davenport 2010, p. 22).

managers to innovate, but they need managerial practices to do so. There is a big difference.

7.2.1. Contributions and a critical evaluation

This research added to the insight on new service development in a knowledge-intensive business service context. The literature of new service development in knowledge-intensive business services was scarce and inconsistent, so most of the findings in this research needed to be analyzed within the boundaries of new service development research in general, or the research related to knowledge-intensive firms. This was problematic, since research in new service development was mostly either derived from product development or generalized to all types of service businesses, and research in knowledge-intensive business services did not attempt to understand new service development in detail.

As for the scientific contributions, this research added insight on the managerial practices and issues related to managing new service development in KIBS. The discussion chapter clearly pointed out that many previous theories were either refined or questioned, and that there is a need to understand new service development better in order to design and develop relevant managerial theories for KIBS. Most importantly, the so-called "understanding" that service development is non-manageable or that a knowledge-intensive context would make it more difficult were questioned and proven to be problematic assumptions. Additional research is needed to further develop the implications set forth in this research.

For Data Rangers Oy, the case company in the action research phase, this research provided insight and tools for the management of innovation and new service development. This new insight was also put to practice and the company is currently growing and increasing its performance with the new services developed during the research process. More importantly, the company and its employees now understand better how new services (i.e. ideas of new services) can be managed and developed to market-ready offerings and the employees have motivation and possibility to innovate and be involved in new service development.

Even though this research provided new implications and findings for the management of new service development in knowledge-intensive business services, it is not without limitations. First, knowledge-intensive business services is abroad concept and the new managerial practices presented may not work in all knowledge-intensive firms and paradoxically at the same time, they might be useful for firms outside of the scope. Second, the new insight provided should be treated as preliminary, since there is no substantial research in new service development in KIBS. Third, it will require vast additional research to reinforce the ideologies and managerial implications set forth in this research, and as a result most of these findings will be questioned and refined.

However, the path to a better understanding on new service development in KIBS is now available, since there is something to debate on.

The research was structured by two main goals: (RG1): *understanding new service development through the eyes of a knowledge-intensive business organization,* and (RG2): *finding the managerial issues and key development activities of successful new service development and innovation in the field of knowledge-intensive business services.* The goals were the starting points of the two empirical parts, RG1 was achieved through focused interviews and RG2 was achieved by the action research done at Data Rangers Oy.

The research goals were translated into research questions in chapter 1.2. The main research question was *how are new services designed and developed in the field of knowledge-intensive business services?*. This was answered by an exhaustive literature review, followed by the two empirical parts that underlined the concept of new service development in KIBS. The findings were interesting and were seen as beneficial by the case company. Furthermore, the findings did promote a new view of new service development in KIBS that might provide useful in future research.

7.2.2. Suggestions for further research

The discussion chapter assessed the previous literature and compared its findings to the ones presented in this research. The most notable questions were;

- How could a new KIBS-driven service development methodology be further refined from this research?
- What are the managerial issues and concerns regarding identity-driven management?
- How could self-actualized innovation be managed more efficiently?
- Is there a difference, from an innovation management side, on what is the type of KIBS that is studied?

These questions outline the proposed research topics. There is clearly a need to study KIBS from the light of innovation and innovation management further, since this research questioned the argument that it is not manageable or only happens as a result of flair and luck. It should also be researched if different types of KIBS have different managerial practices. Here the difference was not apparent, so the division between different types of KIBS might not be valuable for managerial practice. Another key concern would be to assess the individual innovative work done by knowledge workers. This research argued that innovation resides in these individuals and their capabilities, so it would be important to study innovation through the eyes of individual employees, not corporate directors or managers. In relation to this, research should attempt to understand how these individuals could be managed through identity, broad strategy and other non-normative managerial practices.

7.3. Concluding remarks

Knowledge-intensive firms are central in the so-called knowledge markets of today's economy, and hence a key topic for research (Gallouj 2002, p. 256; Howells 2000, p. 5). However, since the majority of service research is conducted within the field of services marketing and the other fields have mainly adjusted the core assumptions of this marketing paradigm (Brax 2007, pp. 14-15), there is no solid academic framework of theories regarding the management of such firms. The same lack of research applies to new service development, which is usually dimension specific and incomprehensive (see e.g. Magnusson et al. 2003, p. 111; Alam & Perry 2002, p. 515; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Stevens & Dimitriadis 2005, p. 175; den Hertog et al. 2010, p. 491).

Despite that both practitioners and academics seem to have settled for acknowledging that services merely happen (e.g. Martin & Horne 1992, p. 62; de Jong & Vermeulen 2003, p. 853; Bullinger et al. 2003, p. 276; Menor et al. 2002, p. 136; Njissen et al. 2006, p. 241), this research argued that service development can be managed and should be managed in a way that is specifically designed for services, not derived from the remnants of the principles and norms developed in the industrial age. In knowledge-intensive firms, the workforce is innovative and capable of both generating the idea and putting it to practice, suggesting that new service development in such firms should be the management of these individuals and their innovative capability, not a normative process that is formalized to the extent where innovative capability slowly dies out.

This process was perceived to work best when steered inherently by the corporate strategy, made possible by giving resources to innovative activities, guiding the concept development phase with a rapid, flexible, customer-focused methodology and by going to the piloting phase as early on as possible. Thus the client's problem is the starting point for the innovation process, yielding a good chance for success (Sundbo & Gallouj 2000, p. 55). Hence no normative process itself is used, but a generalized way of managing innovation enables services being put into practice as quickly as possible and with as little investment as possible. In short, the ideal method embraces both structure and non-controllable innovation (Davenport 2010, p. 34; de Jong & Vermeulen 2003, p. 853). This research proposed a method, but additional research is needed to generalize the findings. However, if one conclusion is to be made, it is that s*uccessful outcomes are managed, not left to chance* (Edgett 1995, p. 48). This is true even in services, and even in knowledge-intensive firms.

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APPENDIX A1: Haastatteluteemat ja haastattelun rakenne

1. Perustiedot
    a. Yrityksen tilanne uusien palveluiden johtamisessa ja kehittämisessä
    b. Haastateltavan rooli uusien palveluiden johtamisessa ja kehittämisessä
2. Innovoinnin johtaminen yleisesti
    a. Metodologiat ja prosessit
    b. Innovoinnin periaatteet yrityksessä
3. Palvelukehitys
    a. Palvelukehitysprosessi
    b. Asiakkaan osallistaminen, co-creation
    c. Ideoiden hankinta
    d. Palveluiden tuotantoprosessit ja järjestelmät
    e. Tuotteistaminen ja tuotteistamisen aste (kaupallistaminen ja kaupallistamisen aste)

APPENDIX A2: Interview structure and themes

1. Basic knowledge and current situation
    a. The company's activity in new service development and innovation management
    b. The interviewee's role in new service development and innovation management´
2. Innovation management in general
    a. The methodologies and processes in innovation management
    b. The managerial principles in innovation management
3. New service development
    a. Processes and methodologies involved in NSD
    b. Customer collaboration, co-creation and involvement
    c. Idea generation and acquisition
    d. Service delivery systems and processes
    e. Role and significance of commercialization